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SUPPLEMENTARY
VOLUME



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TARR AND McMURRY GEOGRAPHIES

SUPPLEMENTARY VOLUME

ILLINOIS

BY

FRANK W. DARLING

HEAD OF DEPARTMENT OF GEOGRAPHY
CHICAGO NORMAL SCHOOL

16046

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THE controlling purpose in writing this supplement has been to show the cause and effect relations of existing facts in such a way that the pupils will not be burdened with a superfluity of geographical statistics and data, but will learn rather to see the development of facts in their true relations, and thus gain a quality of mind enabling them to generalize, from things once experienced, conclusions concerning new facts. The aim is to teach the child rather than the subject-matter. For this reason much space has been devoted to showing the dependence of products, industries, and locations upon the physiographic conditions. The mere tabulation of facts has been made to give way to relative and logically connected statements, in which the mention of places and industries is naturally pertinent. The object has been to produce a geography of Illinois which shall have intrinsic value and not merely serve as an aid in the selling of the series.

Hearty acknowledgment is due to the authors of the general series, not only for helpful criticism, but mainly for their splendid causal treatment of the subject-matter in the series, which has stimulated its use in this supplement as well as in geography teaching generally.

Acknowledgment is also made for the photographs and suggestive matter so kindly furnished by Mr. A. L. Klank, Industrial Agent for the Chicago and Eastern Illinois Railway, Mt. Vernon, Illinois, and to Mr. C. E. Siebenthal, of the United States Geological Survey, who made the models of the Chicago Plain, photographs of which were furnished through the courtesy of the Field Columbian Museum. The photographs of Chicago and vicinity were furnished by the Stadler Photographic Company.

FRANK W. DARLING.

CHICAGO NORMAL SCHOOL,
CHICAGO, ILLINOIS.



RELIEF MAP
OF
ILLINOIS

FIG. 1.

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ILLINOIS

CHAPTER I

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A GENERAL VIEW

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United States Relief Map Questions. — On the relief map of the United States find the junction of the Mississippi and Ohio rivers.

By measuring, tell about what proportion of the distance from the Atlantic to the Pacific coasts, on a line drawn straight through the junction, this junction is. What proportion of the distance from the Gulf coast to Lake Superior? How much of the adjacent land slopes toward this junction? What part slopes away from this junction? What rivers show these slopes of the land by their courses? Find the triangular piece of land included between the Mississippi, Ohio, and Wabash rivers, and Lake Michigan. In what direction do the rivers flow in the western part of this triangle? in the southeastern part? in the northeastern corner?

Relief. — Illinois is called the “Prairie State” because, in the main, it has a broad, flat, nearly treeless surface. It is not level, however, like the great plains farther west, but is gently rolling, with gradually sloping hills and broad, shallow valleys. The relief map shows that in the northwestern corner of the state there are some very high, rugged hills. This is the highest part of the state. Another line of hills runs across the southern part of the state from the Mississippi to the Ohio River. These rise abruptly from the low land to the north. On the south they slope more gradually down to the Ohio River. This southern line of hills is an extended spur of the Ozark Mountains. (Where are the Ozark Mountains?)

In the central part of the state, between these elevated extremities, is a depression which on the relief map looks like a great scar extending in a southwesterly direction almost across the state from Lake Michigan to the Mississippi River. This is the broad and deep valley of the largest and most important river in the state, the Illinois River. You will observe that this valley is separated from Lake Michigan by a low ridge of land, which extends across the northeast corner of the state, following the same curve as the shore line.

This ridge forms the divide which naturally kept the water of Lake Michigan from flowing out through the Illinois River, and it was this ridge that had to be cut through in making the Chicago Drainage Canal. (See page 14.) You will have to look closely at the map to see a broader ridge running parallel with this divide in a broken crescent-like slope from the eastern side of the state to the northern boundary, through which the Illinois River has cut. There is still another ridge, narrower and shorter, but having the same general slope, which lies still farther south, through the middle of which the Embarras River has cut. (Find each of the rivers named.)

These ridges are heaps of earth, piled up as though some great force had scraped the soil out of the bottom of Lake Michigan and left it massed in these long mounds. All the rivers flow away from these ridges, showing that the surface of the state slopes generally towards the south.

In what direction do the rivers flow which are tributary to the Mississippi? In what direction do the branches of the Wabash flow? Find a small river which flows northeast from these ridges into Lake Michigan.

Rivers. — Illinois is naturally divided into seven great drainage areas. Each has its special characteristics of soil, products, and industries, and has developed more or less independently of its neighboring areas. For the most part these areas are river basins which lie wholly within the state, and which are separated from adja-



FIG. 2.

Divides, moraines, and soils of Illinois.

cent basins by divides which can be traced on the relief map.

Two of these areas, however, are only parts of great slopes which lie mainly outside of the state, but which extend into Illinois; the northeastern part of the state is but a small part of the Great Lakes and St. Lawrence Basin. This small portion of the state is called the "Chicago Plain," and is drained by small streams like the

Chicago and Calumet rivers. That part of the state lying south of the southern ridge of hills is part of the Ohio River Basin and drains into the Ohio by short streams.

Trace the divides which separate these other basins — the Rock River Basin; the Illinois River Basin; the Kaskaskia River Basin; the Big Muddy River Basin; the Wabash River Basin. Notice the slope of each basin and where the river rises in relation to these highlands you have studied. (See Figs. 1 and 2.)

The Mississippi River has worn a deep valley along the western boundary, so that the general level of the state is much above that of the river, which is bordered with high and abrupt bluffs. Between the bluffs and the river is a low strip of land, very level and but a few feet above the water. This land is apt to be flooded when the river is high; it is called the Mississippi Floodplain. This level strip is from one to six miles wide.

The United States map shows that nearly all of the rivers of the surrounding states flow toward Illinois. This is because Illinois is

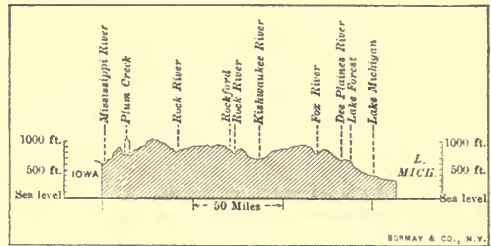


FIG. 3.

Section of Illinois east and west through Rockford.

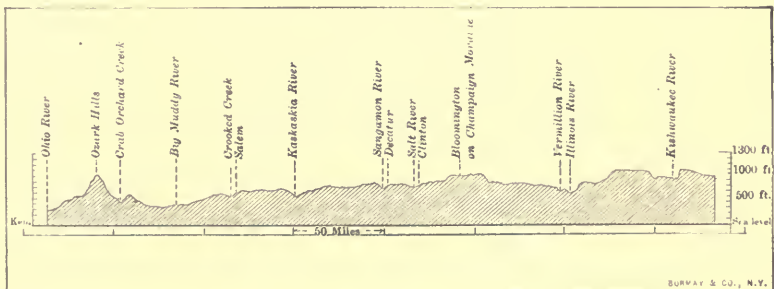


FIG. 4.

Section of Illinois on the 89th meridian, showing topographical features of surface and height above sea level.

in the centre of the immense trough between the great mountain systems of the East and the West (see page 6, Complete Geography). The average elevation of Illinois above sea level is about 600 feet.

This is fully 100 feet lower than the average height of Indiana and 450 feet lower than the average level of Wisconsin.

The Soil and Bed-rock. — Wherever you live in Illinois, the surface of the land is covered with a fine-grained soil, which has resulted

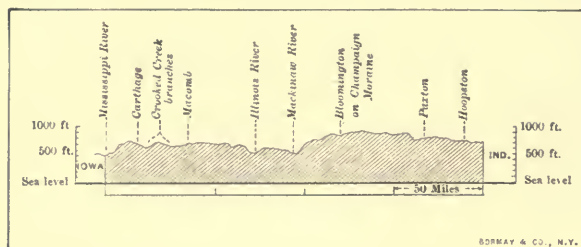


FIG. 5.

Section of Illinois east and west through Bloomington, showing topographical features of surface and height above sea level.

from the grinding and decay of rock. (See Chapter I, Introductory Geography.) On the surface this soil is generally black or dark colored, because the rock particles are mixed with bits of decaying vegetation. Underneath this dark covering is usually found some lighter colored soil, which has little or no decayed vegetation in it. This under-soil differs greatly in different parts of the state; and in most places there are several kinds of subsoil found in layers, one above the other. It may be clay, gravel, sand, silt, or residual soil. When the subsoil is dug through, as in making a well, laying a foundation, or digging a mine, it is found to lie on top of a bed of solid rock. This rock generally lies in thick layers. At many places, where the rock crops out at the surface, or where the rivers have worn through the soil and exposed it, this bed-rock can be seen without digging. At other places in the state the soil is so deep that wells are very seldom dug to the bed-rock. This bed-rock may commonly include limestone, sandstone, shale, and coal. These are all stratified rocks, indicating that they must have been made by being deposited as sediments in water, when the sea covered this region.

The pupils should be encouraged to investigate the soils and the bed-rock of the home region, identifying them and noting the order and place of occurrence. (See Appendix, for description of soils.)

Most of Illinois lies in that region of North America which, during the coal period, was many times raised and lowered, and for ages lay just above the water, when great swamps occupied the land. Each time the swamps sank below the water, a new layer of plant life was buried (see page 2, Complete Geography), so that in the bed-rock of two-thirds of Illinois coal can be mined (Fig. 6).

The layers of coal vary in thickness from a few inches to several feet. In places, as many as sixteen layers of coal are found.

On the map showing the coal region of Illinois you will see that coal is found mainly in the central area of the state. In some places the rivers have worn their valleys down through the bed-rock, exposing the ends of the coal seams. In such places the coal is easily mined by "drift mining"; but over most of the state the coal is covered entirely by layers of rock and soil, and there shafts have to be sunk. (See page 66, Complete Geography.)

Effect of the Great Ice Sheet.

—The great American ice sheet, passing along the trough of Lake Michigan and the lowland of central Illinois, extended there much farther south than anywhere else in the United States. (See Fig. 9, Complete Geography.) It did not extend over the whole state, however, but melted just before reaching the hills, in the southern part of the state. For some



FIG. 6.

Coal areas of Illinois and Indiana.



FIG. 7.

In a mine, showing a thick vein of coal.

reason the highland in the northwestern part of the state was never covered. This part of the great ice sheet formed in what is now the Dominion of Canada, north-east of Illinois, and pushed out its edge, slowly breaking off rock fragments, grinding them

under its heavy bulk, and using them to scratch the surface of the land, as though a great piece of sandpaper had rubbed over this

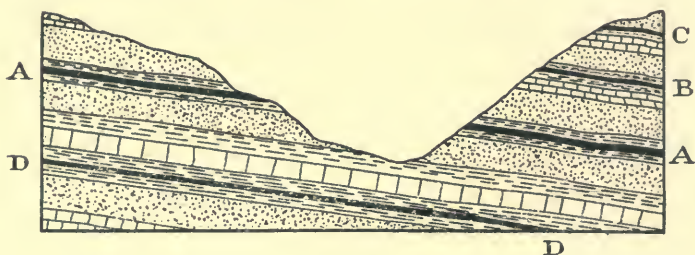


FIG. 8.

An ideal section across an eroded valley in the coal measures. *A*, *B*, *C*, and *D* represent coal seams. Which of these seams can be mined by drift mining? By shaft mining?

north country for years. The soil that covered this region before the glacial period was pushed along with the ice, elevated rocks were worn down, and bed-rock was scratched and grooved.



FIG. 9.

Photograph in the terminal moraine near Ithaca, N.Y. Notice how hummocky the surface is; this is characteristic of moraines.

In the southern part of Illinois the climate was warm enough to melt the ice as fast as it pushed south. Where the ice melted, it left the soil and the rocks it had been carrying, heaped up in long hill-like ridges called *moraines*. (See page 9, Complete Geography.)

This great quantity of melting ice made more water than the rivers had been used to carrying, and the great flood thus caused carried with it loads of soil and rock, which had been brought south by the ice. This soil was deposited along the bottoms of rivers, and when the rivers shrank to their former size, the silt was left, forming level flood-plains like those along the Mississippi. The ice sheet melted gradually, and as its front retreated toward the north, it left the surface over which it had rested covered with a mixed soil called *drift*. This drift is composed of the fine clay soil the ice had made by grinding up the rocks it passed over, and it contains many large and small pieces of rock. This is the reason why the boulders found in Illinois are composed of granite, feldspar, and other substances which form the bed-rock farther north. Land over which glaciers have passed is easily recognized by the presence of glacial drift, and by the scratches on the surface of the bed-rock.

It seems that there must have been at least two of these ice sheets which partly covered Illinois. The earlier is the one we have described as extending to the Ozark Hills. The last one covered only the northeastern part of the state (as indicated by the white portion of Fig. 9, Complete Geography). Where this later ice sheet stopped it left the most southern moraine ridge noticeable on the relief map of Illinois. This is called the "Shelbyville Moraine." (See Fig. 2.) Retreating still farther north, it stopped and built up the broad middle ridge through which the Illinois River has cut. This is called the "Champaign Moraine." At the last stop of the ice sheet in this region, the divide between Lake Michigan and the Illinois River Basin was deposited. This is called the "Valparaiso Moraine." Between these moraine ridges are broad shallow valleys, where less drift was deposited. These valleys made good reservoirs for collecting and holding the great quantities of water; and where there was no sufficient outlet from them, shallow lakes or marshes were formed, into which fine silt soil washed and was deposited on the bottom, covering up the clay drift. When rivers cut through the moraines and drained these lakes, a fine rich silt soil was left, which makes the best farming land in the state. In many places throughout the state small lakes were left, surrounded by moraines in such a way that rivers did not drain them, and swamps resulted. These have since had to be drained artificially before farmers could make use of the soil.

In all that part of the state once covered by the ice sheet the

land is rolling, with gradually sloping hills and with shallow valleys between. The soil on top of these hills and in the very shallow valleys is usually drift clay which was left by the glacier, but which has now become darkened on the surface by decaying vegetation. The drift soil is easily worn away when the water runs over it, and for this reason the many rivers of the state have the general characteristic of wide valleys, with broad flood-plains of silt and sand soil along their courses.

This is not true of those areas in the southern and northwestern parts of the state, where there is no drift. In these regions the bed-



FIG. 10.

A river and its flood-plain in the glaciated region. (Thebes, Illinois.)

rock comes near the surface, being covered only by a thin residual soil formed by the decay of rock underneath. Streams cut slowly through this limestone bed, and the valleys are narrow and deep, without flood-plains. Such valleys are called *canyons*, and are plentiful in the non-glaciated areas of the state. This wearing away of the rock makes rugged, precipitous hills, very different from the rolling prairie land of the rest of the state.

These various soils and their elevation determine very largely what kinds of crops can be best grown in the different regions. *Wheat* grows best in the silt soil in the valleys, where it does not dry out too rapidly, or in the old lake and swamp bottoms left between

the moraines where silt was deposited when the lake covered the land. *Corn* grows in such places too, but it grows well also on the higher clay soil where wheat raising is not profitable. So much of the soil of Illinois is of the latter description, that corn is the largest crop in the state, and Illinois ranks first among the corn-producing states.



FIG. 11.

Characteristic river valley in the non-glaciated region near Rock Springs, Illinois.

Grass grows well on these highlands and makes good *hay*. Where corn and hay crops abound, *cattle* and *hogs* are always profitably raised. The value of the *farm animals* of Illinois is greater than that of any other state except Iowa. (See Figs. 228 and 229, Complete Geography.)

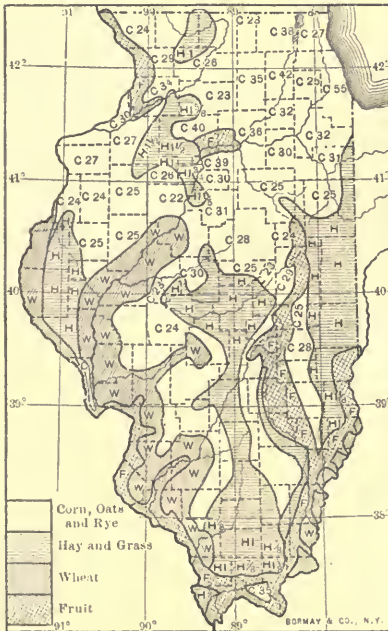


FIG. 12.

Map showing proportional distribution and regions best fitted for raising chief agricultural products.

Trees grow in the soil and climate of Illinois wherever they are planted, yet the vast rolling prairies are almost destitute of trees. As a rule, trees are to be found only in the valleys bordering streams, but now and then a grove of old trees will be found in a protected place on the higher land.

The growth of *fruit* is more dependent upon the climate than upon the soil. Fruit is usually raised upon slopes of land where good air and drainage can be had.

The north and south slopes from the Ozark Hills are well fitted for fruit culture, and it is mainly due to social conditions that more fruit is not raised here.

Climate. — Although the state is far from level, there are no surface elevations within its borders which are of sufficient height to have much effect upon its climate. Lake Michigan has a slightly moderating effect on the land bordering it. Most of the storms of the region, however, come from the west and are not greatly affected by the lake until after they pass Illinois. Those factors which largely determine the climate of Illinois are : (1) its distance in location north of the equator ; (2) its location on the continent ; (3) its location in relation to the storm tracks.

By referring to the United States map (Fig. 44, Complete Geography) find what parallel passes near the centre of the state. Where is the parallel that marks half the distance between the equator and the north pole ? Is Illinois nearer the pole or the equator ?



FIG. 13.

The usual storm tracks in the United States and their relation to northern and southern Illinois.

For a little time each year Illinois is more directly under the sun than the equator is at that time, and then it is usually warmer than the average temperature at the equator. (What time of the year is this?) On the other hand, when our days are shortest it is colder than it is in summer as far north as man has gone. If a record of the temperature in the centre of the state were kept for every hour throughout the year, the average would be about 53 degrees, but the

thermometer has registered as high as 106 degrees and as low as 22 degrees below zero. However, the influence of the sun is not all that determines the climate of the state. Most of California is situated in the same latitude as Illinois, yet there it never gets as warm or as cold as it does here. This difference is due to the location of Illinois on the continent. California's storms come from over the Pacific Ocean and are tempered by that great body of water. Most of the storms that reach Illinois have come over the Rocky Mountains and have swept over the great plains. These broad, unprotected plains warm up and cool off rapidly, so that winds blowing over them will be very hot at one time and very cold at another. This accounts in a great measure for the sudden changes in temperature and weather in Illinois. You will see by the map, Fig. 13, that there are three great storm tracks in the United States which mark the directions in which weather changes travel. Notice the position which Illinois occupies in relation to these. About 75 per cent of the storms which affect Illinois have followed the track from the northwest and are apt to bring very cold weather in winter and hot, dry winds in summer. The other storms from the southwest and south are always warming. There is hardly a state in the nation, outside of New England, which is subject to so many and such sudden changes of weather as Illinois.

Variation within the State. — What parallel forms the northern boundary of Illinois? To what parallel does the southern extremity extend? One degree on the meridian corresponds to about 69 miles; then how many miles long is Illinois from north to south?

Extending through so many miles of latitude, we would expect to find quite a difference existing between the northern and southern parts of the state. The variation is greater than it would otherwise be because the southern part of the state lies more frequently in the track of the southern storms, while the northern part receives for the most part only the variable storms from the northwest. As the result, the northern part has severe winters with sudden changes of temperature, as compared with the southern part.

Between the two sections a seasonal difference of about three weeks exists. The average difference in annual temperature between the extreme north and the extreme south is about 11 degrees. The last killing frost seldom comes later than April 1 in the southern section, while north of the 41st parallel it may be

expected as late as April 23. It is these differences of temperature that make it possible to raise quantities of fruit in the southern part, while in the north full crops of fruit can be expected only in exceptional years and in well-protected places.

The warmer southern storms, which pass over southern Illinois, usually turn east before reaching the northern part of the state. (See Fig. 13.) As they advance toward the north, they cool, condense the

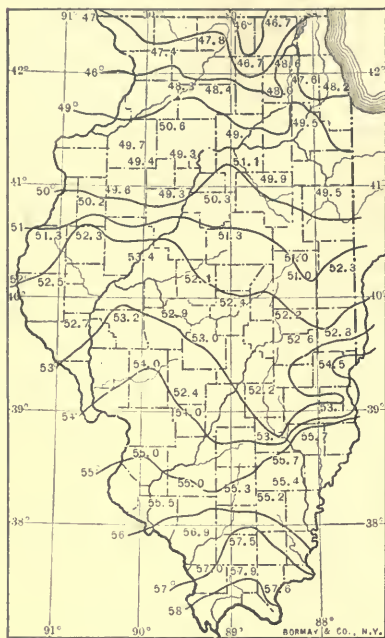


FIG. 14.

Average annual temperatures in Illinois.

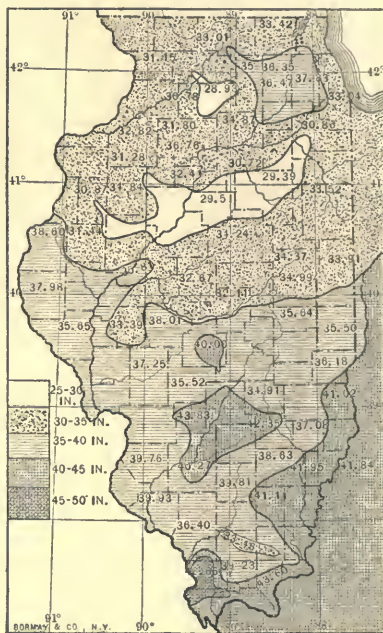


FIG. 15.

Average annual rainfall in Illinois.

moisture in the atmosphere, and cause rain. For this reason southern Illinois receives about 10 inches more rain during the year than the northern part of the state. The average rainfall for the whole state during one year is about 38 inches. The region just west of the lake receives an increased rainfall, due to its nearness to the water body. The climate of the entire state is such as to make it exceedingly productive. There is no place which is arid.

CHAPTER II

PHYSIOGRAPHICAL REGIONS

Lake Michigan Drainage Region. The Chicago Plain.—That little northeastern corner of the state which drains into Lake Michigan, and which is separated by the Valparaiso moraine from the great



FIG. 16.

The Chicago Plain as it exists to-day, showing the level land left by the retreat of the water.



FIG. 17.

The Chicago Plain, showing the lake covering the present site of Chicago.

Mississippi Basin, was dependent almost entirely for its peculiar formation upon the effects of the ice sheet.

After the ice sheet had remained for many years with its front piling up the drift that made the Valparaiso moraine, it melted

slowly away until its front rested across Lake Michigan. The water could not run from the lake north as it does now, for the northern outlet was filled by the ice sheet. The water rose over the land until it reached the top of the moraine, then it flowed over the lowest part in the moraine (640 feet above the sea level), and, rushing through this, tumbled down the other side, cutting a channel to the Illinois River, and then flowed in a great stream diagonally across the state to the Mississippi River. In this way it happened that for many years the Chicago plain, where Chicago now stands, was the level bottom of the lake. As the ice sheet melted back farther north, the water of the lake gradually fell, leaving the old bottom with sandy beaches, exposed as lowland. (See Figs. 16 and 17.) After the lake fell too low to flow through its old outlet, a small river took its place and ran from the top of the Valparaiso moraine across the state to help form the Illinois River. This is called the Des Plaines River. This low, crescent-shaped Chicago plain then drained off into Lake Michigan through the Chicago River, one branch of which rose in the old channel of the former outlet of the lake. Thus there was left but a short distance, about a mile, of lowland between the Des Plaines and Chicago rivers, to separate the waters of Lake Michigan from its old outlet into the Illinois River. In 1900 this lowland was dug deeper, making it so low that Lake Michigan flowed into the Chicago River and out through its old outlet into the Des Plaines and Illinois rivers. So now Lake Michigan flows through its old outlet in an artificial channel, the Chicago Sanitary Canal. (See page 2.)

All of the state, except this little northeast corner, lies in the great Mississippi Basin; that is, all of the other rivers of the state are naturally tributary to the Mississippi River. **The Illinois River Basin** is by far the largest of the state. It extends diagonally across the state from the Valparaiso moraine to the Mississippi River. Its average width from divide to divide is 120 miles. The southern slope is nearly twice as broad as the northern. (See Figs. 1 and 2.) The Illinois River really originates in the Des Plaines, which rises just over the state line in Wisconsin, on the Valparaiso moraine. The Des Plaines flows through the Valparaiso moraine, at the old lake outlet, with falls and rapids, descending several feet in a few miles. It is joined by the Kankakee River, and continues flowing southwest, as the Illinois River, and cuts through the Champaign moraine.

North of the Illinois River, Grass and Fox lakes, near the state





FIG. 18.

line, are remains of the old glacial lakes in this region and are drained by the **Fox River**. The Illinois River flows through a deep channel considerably wider than the present bed of the river. For long distances the channel is cut through the bed-rock, exposing ledges of limestone and the coal layers. A broad flood-plain of fine silt soil forms the floor of the valley on each side of the stream. The divide between the Illinois Basin and the Rock River Basin on its north is the highest divide in the state, averaging 850 feet above the sea level. In one place where the **Big Bureau River** flows, the divide is very low, and the Mississippi may have at one time flowed through here into the Illinois River. This large stream left a rich soil covering the surface which makes the region around the Bureau River the most productive in the state. It is through this region that the "**Hennepin Canal**," which connects the Illinois and Mississippi rivers, is being constructed.

After the Illinois River flows through the Champaign moraine, its valley suddenly widens so that in places it is 18 miles wide. This large flood-plain, covered with its rich silt, makes rich farm land. The Sangamon River drains more Illinois land than any other branch of the Illinois River. The soil of this Sangamon region is glacial drift except where silt and sand have been deposited in the flood-plains. The last quarter of the Illinois River flows almost directly south, nearly parallel to the Mississippi River for 60 miles, before it finds a place to get around the limestone ridge which lies along the western border of the state.

The Illinois River is navigable for three-fourths of its length, and its lower portion accommodates most Mississippi boats. How much of the Illinois Basin has coal underlying it? (See Fig. 6.)

The Rock River Basin may be said to include all that part of the state lying north of the Illinois River Basin, except a small portion of the land in the extreme northwest, which drains directly into the Mississippi by several short, swift-running streams. This is the highest basin in the state. Near its northwestern corner on the Wisconsin state line, about 25 miles from the Mississippi, is Charles Mound, the highest point in the state. It is 1275 feet above the sea, and 600 feet above the Mississippi, directly west. This little triangular corner of the state is peculiar in that the ice sheet did not cover it at any time, so the old surface appears just as it did before the glacial period, except that it has been weathered and worn down. The soil does not cover the surface deeply, and

of course is not drift, but residual soil, being formed by the decay of the limestone bed-rock. The rivers have worn deep canyon-like valleys through the rock with abrupt sides unlike the river valleys in the glaciated portion of the state. The hills are not rolling, but have abrupt rugged slopes. A good supply of lead and some zinc are found in this little corner, though much less is being mined there now than formerly.

The Rock River has its origin in Wisconsin and flows almost directly south and enters Illinois in a deep valley which it has cut through the drift and bed-rock. As it enters the state, it is joined by the Pecatonica, which originates in the non-glaciated region of Wisconsin. From the highland along the upper part of its course, the Rock River falls very rapidly, and in the lower half of its course the basin is comparatively low. The river valley is not well marked, the land sloping gradually back from the stream. Between the Rock River and its main southern tributary, the Green River, the land is so free from slopes as to be poorly drained and much of it is occupied by swamps. This lower basin, as you would suspect, is well covered with flood-plain soil or silt, making a rich farming land where it is drained, while the soil of the upper basin in a few places in the extreme southern portion is mainly clay deposited by the glacier. Except in a few places in the extreme southern portion, the bed-rock in this basin does not contain any coal.

The Kaskaskia River Basin. — The Kaskaskia River rises in the central part of the southern slope of the Champaign moraine, but is kept from flowing into the Illinois River by a peninsula-like extension of the moraine. The Kaskaskia Basin is a long, narrow, triangular trough. On its northwest lies the Illinois Basin, and on its southwest, for nearly the whole distance, lies the Wabash Basin. The divide between the head of the Kaskaskia Basin and the Wabash Basin is formed by the Shelbyville moraine. The Kaskaskia River cuts through the western end of the Shelbyville moraine. South of this moraine the divide is low, and on its top the Big Muddy River rises and has cut a short basin of its own between the Kaskaskia and the Wabash basins. The Kaskaskia Basin has short slopes on its side drained by short tributaries running through broad valleys. The southern half of the basin is low, and most of the land is covered with a rich alluvial soil, which has been spread over the surface by old floods and by the continual washing down of the surface from the higher

land surrounding. The higher land, in the northern part of the basin, is drift clay deposited by the ice sheet. On account of its long north and south extent and these differences in soil, the north portion produces mainly corn and hay, while wheat and fruit grow well in the southern part. The Kaskaskia Basin lies almost wholly within the coal region, and a great deal of coal is mined.

The Big Muddy River Basin. — The Big Muddy River Basin is a short, triangular basin drained by the Big Muddy River and its two tributaries, the Little Muddy River and the Beaucoup Creek. These rise in the divide which separates the basin from the Kaskaskia Basin on the west and the Wabash on the east. The character of the basin is almost identical with the southern portion of the Kaskaskia Basin, low, flat land, with few elevations except the limestone rim along the Mississippi and the high, almost mountainous, divide on its south, which turns the river away from it into the Mississippi River. The southern part of this basin marks the southern extent of the ice sheet. In this basin the coal layers come very near the surface. The soil is mainly drift clay in the upper part of the basin and a fine, pervious silt in its lower portion. That part of Illinois lying south of this basin, including the ridge of high hills, which here runs east and west across the state, is non-glaciated country.

The Wabash River Basin. — The Wabash River Basin includes most of the state of Indiana and nearly all of the eastern part of Illinois. This part of Illinois forms the western slope of the Wabash River, and is drained by three large tributaries of the Wabash. The Big Vermilion River rises on the north side of the Champaign moraine, flows through this moraine, and joins the Wabash about 40 miles north of where it begins to form the state boundary. This part of the slope is high, rolling prairie land with a well-drained clay soil. The Embarras River rises on the southern slope of the Champaign moraine near the origin of the Kaskaskia, but flows away from it, cutting through the Shelbyville moraine. It then flows rapidly south through lower, flatter country which resembles the country of the lower Kaskaskia Basin, and finally enters the low, broad valley of the Wabash.

The soil drained by the upper portion of the Wabash River is thick glacial drift, except here and there where glacial lakes and swamps stood long enough to cause a covering of silt. In its lower basin, much of the land has the appearance of broad, flat, alluvial plains, composed of silt, with sand and gravel underneath. The

more southern portion of this Wabash slope is drained by the Little Wabash River. It rises on the southern slope of the Shelbyville moraine and flows almost directly south, down the gradual slope to the lowlands, joining the Wabash just before it empties into the Ohio. The land drained by the Little Wabash River is low and resembles very closely the lower basins of the Kaskaskia and Big Muddy rivers. Coal is not found in any quantity on this slope of the Wabash, except in the lower part of the Little Wabash Basin. The land lying along the Wabash River and forming its valley is covered with silt and sand. The relief map shows that there is a stretch of very low land extending east and west across the state from the mouth of the Big Muddy to the mouth of the Wabash, but south of this lowland is the high ridge of the Ozark Hills which you have before observed. These mark the southern non-glaciated region.

The Southern Non-glaciated

Region. — In going from that northern portion of the state which has been so affected by the ice sheet into this non-glaciated region, one notices at once a great change in



FIG. 19.

Characteristic view in the southern non-glaciated section of Illinois.

the soil and surface structure of the land. The high hills are but thinly covered with

yellowish residual soil. The limestone crops out everywhere in great, worn, broken ledges of rock. The small streams, unmolested by the glacier, have cut deep canyons in the rock. The surface of the bed-rock where it is exposed is not smoothed off as in most of the state, but like that of the non-glaciated corner in the northwest, it has decayed into pieces and presents a rough, chipped surface. Because the ice sheet has not worn down the hills, they stand as abrupt peaks and not gradual rolling mounds as in the centre of the state. This line of hills averages about 800 feet in height, rising abruptly from the lowlands on the north. The second highest point in the state is in this ridge of hills. It is 985 feet above the sea level and about 685 feet above the Mississippi River, only a few miles directly west. From this high ridge the land slopes more gradually, in rough terraces, to the Ohio and

Mississippi rivers on the south, until it reaches the lowest point in the state in its most southern extremity. This point is but 300 feet above the sea level, and so low and level that the Mississippi and Ohio rivers overflow it at high water.

No large rivers drain this non-glaciated region, but many small inland swamps abound. The soil in the hilly portions is thin and unproductive, but into the more level lands a great deal of silt and sand has been washed and made many pockets of rich farm land. All along the Ohio River is a broad, flat flood-plain with the richest kind of soil, extending back into the state for an average of fifteen miles, much like the flood-plain which borders the Mississippi River most of the way along the western border of the state. This region is especially adapted to fruit raising.

CHAPTER III

HISTORY OF ILLINOIS

The Indian Period. — No man knows how long the Indians had used the broad, rolling prairies of Illinois for their hunting grounds, and lived along the rivers in little villages of tepees. But when the first white men came into this part of the country, they found

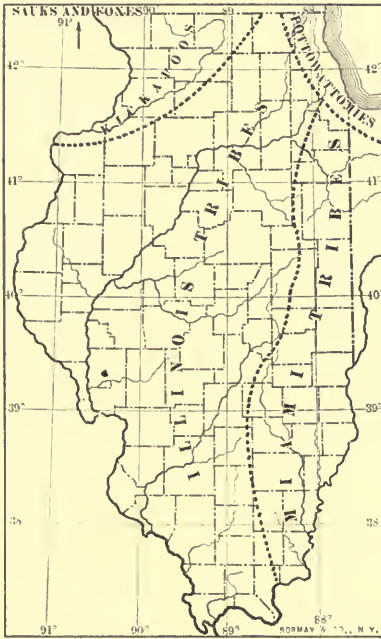


FIG. 20.

Indian tribes in Illinois, 1700.

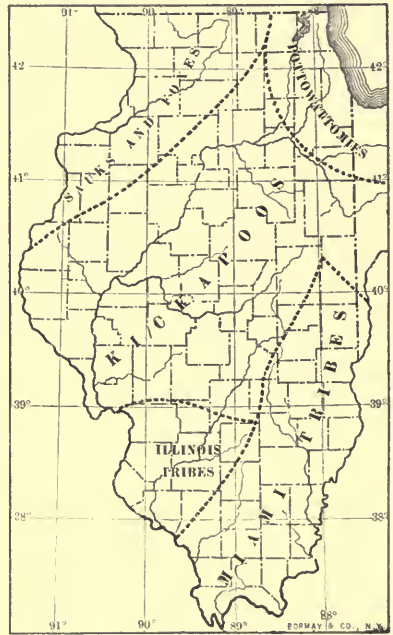


FIG. 21.

Indian tribes in Illinois, 1760.

several strong tribes of Indians occupying the land. Each tribe claimed a river basin for its own, so that what is now Illinois was really divided up into several Indian states, and the divides between the river basins formed the irregular boundaries between these Indian states.

By the middle of the seventeenth century the English people had crowded the Indians out of the land east of the Alleghanies. The French had built their towns all along the St. Lawrence and were beginning to start settlements around the Great Lakes. These early French settlers were getting rich, trading for furs with the Indians. They kept sending exploring parties farther and farther west to the new trading posts, and with each exploring party went priests to make friends with the Indians and to convert them to Christianity. So it happened that in 1673 a young Frenchman named Joliet and a kindly old priest called Father Marquette formed a party with five other men and started from the mission of St. Ignace opposite the island of Mackinac, in two canoes, to find a great river of which the Indians had told them. Skirting the northern shores of Lake Michigan, they entered Green Bay; following up the stream as far as they could go, they carried their canoes across the short portage and put them into the Wisconsin River. Floating down-stream, they discovered the upper Mississippi River. The first Indians they met, at the mouth of the Des Moines River, called themselves "Illini."

To them the word "Illini" meant men, and they used it to distinguish their more civil character from that of their enemies, whom they called beasts. This name clung to this tribe of Indians, and from it came the name of the state.

Joliet and Marquette followed the Mississippi down nearly to its mouth and then paddled back up the stream to the Illinois River. They toiled up the stream until they came to the large village of the Kaskaskia Indians¹ near Starved Rock, where Utica now stands. Thence they went up the Illinois and Des Plaines rivers to the divide, where they had to carry their canoes over into the Chicago River. "It was in the month of September when they arrived at the place, then a broad waste of grass and prairie flowers channelled by two lazy streams that met from opposite directions and, united, flowed into or rather formed a connection with the lake. This was Chicago as nature made it and as these men, who were unquestionably its first discoverers, saw it."

In the fall Marquette attempted to return to the Kaskaskia village. He found the Chicago River frozen, and was taken ill and forced to build a cabin near the source of the south branch of the

¹ The Illinois nation was made up of five tribes, — Kaskaskia, Cochokias, Tamaroos, Peorias, and Metchigamis.

river, where he remained over the winter. This cabin was the first structure on the Chicago plain, and the first built by a white man in Illinois.

Period of French Settlement.—La Salle was the next Frenchman to explore the territory. He brought soldiers with him and built the first fort (1680) on the south end of Peoria Lake, just across the river from where Peoria now stands. La Salle called this *Fort Crève Cœur* (Broken Heart) in memory of the hardships he and his men had undergone. La Salle claimed all of this country for France, and appointed his friend Tonty to be its governor. Tonty was the first civilized ruler of any kind in this region.

French fur traders began to come into the country and form little settlements along the Illinois River. The French settled down among the Illinois Indians and made friends with them, but the other tribes of Indians often made war excursions into the territory, so it was necessary for the French to build forts wherever they settled in numbers. The summit of Starved Rock was a naturally protected place, and the French fortified it and named it Fort St. Louis.

The Frenchmen were not all traders, but many of the men married the Indian women and settled down to till the soil. Little villages of French and Indians began to grow up along the Kaskaskia River. In 1700 a large village grew up around the post and mission near the mouth of the Kaskaskia River, on the Mississippi flood-plain. This place received the name of Kaskaskia and was the foundation of the present place of that name. In the same year a mission was founded at Cahokia, on the bluffs of the highlands overlooking the Mississippi Valley, just below the present site of East St. Louis. In 1720 the French built Fort Chartres, near the present site of Prairie du Rocher. At this time it was the strongest fort in North America. (Only a portion of the ruins now remain. The changing course of the Mississippi has washed away most of it.)

As the French poured into Illinois, these settlements grew and many new ones were built. One of the settlements grew rapidly into the largest French village of the region. This was the beginning of St. Louis. It was destined to be a great city on account of the advantageous position between the mouths of the two great traffic streams, the Missouri and the Ohio rivers.

All of the French settlements were not made along the Mississippi River, however. Vincennes started as a little village across the

Wabash River from what is now the most eastern extension of Illinois. Vincennes soon became a fortified place of great importance to Illinois, as it commanded one of the important routes into the Illinois country.

Struggle for Ownership. — No boundary line had ever been determined between the English possessions along the Atlantic coast and the French possessions along the Mississippi. As each began to extend its settlements, a collision arose. The strong Iroquois Indians in the East, aided by the English, now came into the Illinois country and made war against the Illinois Indians and the French. This resulted in the French and Indian War, which lasted from 1754 to 1759. It was really a war between France and England. By the final treaty all the land east of the Mississippi and north of the 31st parallel was ceded to England. At this time, however, not a single English settler lived in the region, while there were about 2000 French.

One of the first things the United States did, after the Declaration of Independence, was to send troops to force the surrender of the old French forts. Colonel George Rogers Clark, a Virginian, was the shrewd hero who captured these forts, and, still more, pacified the French settlers and their Indian friends, making them content with the American authority. About this time, Virginia, who claimed all land lying west to the Mississippi River, issued a proclamation organizing all of this region into a county of Virginia, to be called "Illinois County." A governor was appointed and Kaskaskia was selected as the capital.

Period of American Settlement. — The governor of Virginia offered inducements for American settlers to occupy land in her Illinois territory, and very soon the Americans began to flock in. These early settlers were mainly from the Southern colonies. So the southern part of the state, especially the Kaskaskia Basin, was the first to be settled by Americans. The new settlers lived on their farms and refused to be friendly with the Indians, and many Indian battles and constant trouble resulted.

In 1784 Virginia ceded her Illinois county to the United States, and all of what is now Ohio, Indiana, Illinois, Michigan, and Wisconsin was organized into the Northwest Territory. All land so far purchased from the Indians was surveyed by Congress and offered for sale to settlers. Counties were laid off in the southern part of the state and justices of the peace appointed by the villagers. This

was the beginning of the organized government. The rapid settlement led to rapid division of the territory into smaller parts. In 1809 Indian Territory was divided, and Illinois, Wisconsin, and Peninsular Michigan were organized into Illinois Territory with its capital at Kaskaskia.

War of 1812.—The English, who had never really withdrawn their troops from Fort Detroit, continually encouraged the Indians to attack the American settlers. The Indians made frequent excursions into Illinois. To prevent this, in 1803 Fort Dearborn was built on the south bank of the main branch of the Chicago River. During the War of 1812, the British in Canada made every possible use of the Indians. At the point where 18th Street, Chicago, now terminates at the lake, the American garrison which had vacated Fort Dearborn were set upon by five times their number of Pottawatomies. A horrible massacre followed, which resulted in the killing or the capture of the entire American force. The Indian and French village at Peoria was ruthlessly burned by the Americans. The whole state was threaded with little battles and skirmishes against the British and their tools the Indians, until after peace was declared in 1814, when the British entirely withdrew.

Period of Statehood.—By 1818 the territory now included in Illinois claimed 45,000 inhabitants; admittance to the Union was applied for and granted. At first it was provided that the state should only extend as far north as a line drawn west from the southern extremity of Lake Michigan. By consistent lobbying this was extended to its present boundary at 42 degrees 30 minutes, to include a strip extending 51 miles farther north. This strip of territory was destined to be the richest part of the state. A state organization was established, with a capital at Kaskaskia. In 1820 it was decided to move the capital to Vandalia, on the Kaskaskia River. Nearly all of the inhabitants had come from the South and had settled in the southern part of the state. Many had brought their slaves with them, but the majority were people who had been crowded out of the South because they were financially unable to hold slaves and would not be dominated by the wealthier class. The sentiment seemed about evenly divided on the slavery question. The matter was settled in favor of freedom by a popular vote in 1822. The stand once taken was firmly held to. This is evidenced by the fact that Illinois gave the first candidate for the presidency to a national antislavery party, and later gave Abraham Lincoln and

Grant to lead the antislavery cause to victory. The northern part of the state received its new settlers mainly from the states in the East, who came by way of the Lakes and made Chicago grow as a trading and junction point. This attracted people to the northern part of the state. Added to these attractions, in 1827 lead was discovered in easily accessible quantities along a small stream — Fever River — which flows through the hills of the northwestern part of the state. A great rush of people followed, from every direction, to mine this valuable metal. The town of Galena, with many little outlying settlements, sprang into existence.

Before the War of 1812 the fear of Indians and the ignorance of the country caused the settlers to come to the new land almost entirely by water, but the partial settlement of the state and the Indian defeats during the war had removed these objections. The emigrants now sought roads on land. These early emigrant roads determined the later settlement of the state to a large extent. They were not roads in the sense we use the word to-day, but rather *trails*, whose general direction led to an objective point. These emigrants travelled in great covered wagons. Usually several families would club together and make up a party with a number of wagons and a herd of farm animals. As they hurried across the country, they naturally chose to travel along the highest ridges of land, where they could keep a watch over the surrounding country for attacking parties of Indians; then, too, the high ground was better drained and made travelling easier. For the most part, the streams had to be forded, and roads generally led across places where the streams broadened out into shallow places. Some of the rivers were too large to ford, and it was necessary to ferry across. A route once used formed the trail which the next party naturally followed in going the same direction, and so a few well-worn roads were established, running through the state, leading to a few popular trading-posts, or into some favorable region which was opening up for settlement.

In the southern part of the state, most of the roads led from the Ohio River into the Kaskaskia Basin, which was at this time (1820–1830) the most densely populated part of the state. From this region and throughout the centre of the state, the roads led north into the new country, which was becoming rapidly settled either toward Chicago in one corner, or Galena in the other.

In the northern part of the state, the roads all ran east and west,

leading from Chicago toward the Mississippi or into the lead-mining district about Galena. Along these roads new settlements sprang up, which were destined to become the largest cities in Illinois. Wherever two or three roads, crossing, made an advantageous point for a trading-post, some pioneer would stop, build a cabin and stockade, cultivate the land, and start a small supply store. Others would be attracted by the advantages which he had created and settle near by. Thus many Illinois towns started.

Wherever there was a ford over the stream the emigrants often had to camp to await a time when the water should be low enough to permit them to cross in safety. Such places became centres for settlement. Sometimes a grove that sheltered a fresh spring would prove an attractive place, and would soon grow into a settlement. The roads, which ran north and south, always followed one of three routes: (1) along the divide between the river basins, where the travellers would have the advantage of the highroad; (2) along the river valleys, which had been well settled previously, and where the traveller might depend upon the protection of the inhabitants; or (3) following along the crest of one of the moraines.

Many of the early settlers were among the most industrious and hardiest people from the old Eastern states. They were used to surmounting difficulties, and no task seemed too great for their undertaking. In 1837 they determined upon a policy of state improvements, and it is little wonder that they overdid it. Every county attempted to get something out of the state coffers. Great extravagance ensued, which threw the state under a heavy debt from which it did not recover for over fifty years. The capital was removed from Vandalia to Springfield. From the time of Joliet to the present it has been a dream to have the waters of Lake Michigan conducted through the low divide into the Illinois River, to make a great canal which would allow the largest ships to pass from the Lakes to the Gulf of Mexico. After ten years of slow progress the Illinois-Michigan Canal was opened in 1848. As completed, it only allowed small canal-boats to ply between La Salle and Chicago, but this gave a great impetus to trade throughout that part of the state, and with the increased trade which was beginning to come by the lake did much to develop Chicago and the cities along the route of the canal.

In 1848 the first locomotive steamed out of Chicago, on the Galena and Chicago Union Railway. The Illinois Central, the next line to

be successfully completed, followed some old roads in its southern extension diagonally across the state. In 1852 Chicago was connected with the East by rail, the Lake Shore and Michigan Southern and the Michigan Central Railroads both being completed in the same year.

Most of the railroads and especially the earlier ones were built along the old wagon roads. This added greatly to the advantage of those old towns which had been built along the old wagon roads. New places sprang up along these railroads, and many places in Illinois owe their origin to a railroad crossing or junction. To-day the railroad junctions and the places having the largest populations in the main coincide. In following these old wagon roads the railroads have simply utilized the natural lines of travel; in the southern part of the state all of the main lines tend north. In the centre of the state the trunk lines run diagonally across the state with a north and south trend. In the northern part of the state the roads run east and west.

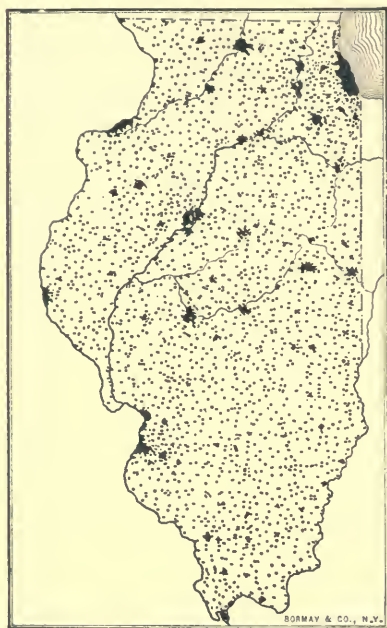


FIG. 22.

Density of population.

Each dot represents the location of 1000 people.

Whole population	4,821,550
Average to square mile	86
Average to square mile, Cook County	2066
Average to square mile, Putnam County	27

progress in these regions as it is to the fact that each is abundantly supplied for much of its boundary with navigable streams. Each of these counties has a surface of rocky hills which would make railway construction very expensive. (Locate these three counties on the relief map.)

Besides these transportation lines, the Illinois-Mississippi Canal is being constructed to run from Hennepin in the Illinois River over the low place in the divide between it and the Rock River. The

Although Illinois has a greater number of miles of railway than any other state, there are three counties which have none: Calhoun, Hardin, and Pope. This is not due so much to the lack of

dream of an open ship canal from Lake Michigan to the Mississippi River is still to be realized. The construction of the Chicago Sanitary and Ship Canal to Lockport is only one step farther toward this realization. It seems probable that in the near future such a canal will be completed and will provide not only a ship route, but an immense water power which will rival that at Niagara.

CHAPTER IV

CITIES AND COUNTIES BY PHYSIOGRAPHICAL REGIONS

The Chicago Plain. — It has already been seen that the favorite route of the Indians and the early explorers and settlers, when they entered the Illinois country, was by way of Lake Michigan, up the Chicago River, and then over the narrow portage into the Des Plaines and Illinois rivers.

Thus the Chicago plain formed the entrance to the shortest and most travelled route from the Great Lake Basin to the Mississippi Basin.

The Chicago plain was never a favorite place for an Indian village. Any band of Indians that attempted to settle here would be continually harassed by the coming and going of other Indians. For this reason, although for a time it made a splendid place for a hardy trader, it was not a safe place for white men to settle. Less dangerous places farther along the route down the Illinois River were settled into struggling villages by the French before Chicago was even a permanent settlement. It had been for years a transient camping place for Indians and French, when in 1785 the first building was erected with a view to permanent occupation. This was an unsubstantial fort built by Dumont, and did not continue as a protection long enough to attract settlers around it.

At this time the level plain was by no means all prairie. Trees lined the river banks. Most of the land between the north branch and the lake was covered with small trees, and trees grew along the south shore of the lake. These furnished fuel and logs for the cabins of the early settlers. The land was mostly low, and except where these patches of trees grew, it was flat prairie, covered with grass and prairie plants. Along the river banks and in the marshy places the wild onion grew in great abundance, on account of which the Indians named the river "Chi-Kang-Ong," meaning place of skunk weed or wild onion. Marquette wrote the name "Checangon," and from this has come the present name "Chicago."

In 1803 the government built Fort Dearborn on a high knoll on

the south side of the river just where its main branch bent to join the lake at what is now the foot of Rush Street. Protection thus insured, families might settle in comparative safety. John Kinzie, the "Father of Chicago," built the first real residence, directly across the river from the fort. Mr. Kinzie settled as a trader and soon established outlying posts which were contributory to Chicago, along the Illinois River, the Rock River, and the Milwaukee River. The furs thus collected were sent north by the lake and sold at Fort Mackinac to be shipped east. Thus Chicago early became the distributary point between the East and the West.

At the time of the Indian massacre in 1812 (see page 25), five homes constituted the settlement at Fort Dearborn. A Frenchman named Ouilmette soon moved with his family out of the little settlement to a piece of land he had purchased on the north shore of the lake. When it grew to a settlement, it took the name of its first settler, Wilmette.

The massacre of 1812 checked the growth of the Fort Dearborn settlement, but after the fort was rebuilt in 1816 a slow growth began which resulted in the building of a number of log and slab houses along the river. The fertile soil induced farming in connection with the fur trading.

When the legislature decided upon building the Illinois-Michigan Canal (see page 27), it empowered the canal commissioners to "locate the canal, to lay out towns, to sell lots, and to apply the proceeds to the construction of the canal." This act was responsible for the first survey of the land on which Chicago is now located. The town of Chicago, with about 150 inhabitants, was laid out; it included the region between Madison and Kinzie, and State and Des Plaines streets. In 1833 it was incorporated as a town.

Previous to the laying out of the town there had been no harbor into which large ships could enter. It was necessary for them to anchor off the shore in the lake and unload in small boats, which could pass through the shallow mouth of the river. The river flowed into the lake at the foot of Madison Street, and the lake had piled up a sand-bar almost across the mouth. In 1833 the Illinois-Michigan Canal was planned to be a great ship route from Lake Michigan to the Illinois River. It was necessary then to deepen the mouth of the Chicago River. This Congress did, and built a long dike on the north side of the entrance, thus straightening the river and making the present harbor entrance.

In spite of the numerous hindrances Chicago at once began its phenomenal growth. Large tracts of land were put up for sale by the government at auction. Emigrants flocked into the little town by boat, horse, and "prairie schooners" to take advantage of the land purchase. Rude log and slab huts were built all along Water street and in a scattered manner began to dot the prairie all over town. Many newcomers were forced to sleep out of doors or live in tents. The population increased from 150 in 1833 to 2000 in 1834. This was the first boom. The importance of the location was beginning to dawn upon people, and every man bought all the land he could afford, and scrambled for more. Rude improvements naturally followed. County roads had been laid out before this along what are now Ogden and Archer avenues. All of the streets were low and muddy. Logs and slabs were laid down crosswise on the muddy surface to form a sort of pavement. A log bridge was built across the north branch of the river at Kinzie Street, and another across the south branch at Randolph Street. A public ferry had been in operation at the foot of Dearborn Street, and in 1834 this was replaced by a rude lumber drawbridge.

In 1837 Chicago was organized as a city of 4170 inhabitants. It had become a distributing point of great importance to the new West. Goods were sent from New York by the Erie Canal and the Great Lakes, and ships returned loaded with furs, grain, and lumber. The great need was of some more serviceable way of bringing the products from the interior into the city for shipment. Country turnpikes had been built in every direction, but they did not reach far enough, and the hauling was too difficult. This pressure was greatly relieved when the Illinois-Michigan Canal was opened in 1848. The first year's traffic through it was enormous for that day. Corn, wheat, fruit, and farm produce of every kind came from the centre of the state and thence down the Chicago River. Water Street, which bordered the river, became a busy place and the chief street in the town. The river was filled with every sort of craft, bringing in farm produce. In this year the first ear of wheat came into Chicago by rail, over the Galena and Union Railroad (now part of the Chicago and Northwestern), which had just been completed, from the present site of Wells Street depot to the Des Plaines River. So great an increase of traffic made it necessary to have good streets in the city. In order to get them, the level of the streets all over the city had to be raised from eight to fourteen feet. Pavements came

next, and with these more permanent bridges. In 1869 the Washington Street tunnel, under the south branch of the river, was opened to foot-passengers.

After the first railroad had entered Chicago others came in rapidly, and in 1852 what is now the Lake Shore and Michigan Southern completed the first line of road connecting Chicago with the East. This opened up a new feature. All roads that would run into the northwest from the east must run south of the lake through Chicago. Thus Chicago was not only the centre of north and south water traffic, but the natural centre for all east and west land traffic. The effect of this realization was another boom. Railroads were built in rapid succession into and out from Chicago in every direction. Manufactories of all kinds began to be built to make use of the raw materials that were flowing in from all sides. By 1870 Chicago had developed into a great commercial centre, having grown almost equally along every commercial line. It was a central point for travellers, a railroad centre and shipping port, a wholesale and distributing point, a storage and commission centre, and rapidly becoming a great manufacturing centre with 300,000 inhabitants. It included 36 square miles of territory.

In October, 1871, the great Chicago fire almost wiped out this prosperous city, burning over 2200 acres, almost solidly built up with 15,768 buildings and 175 manufacturing plants.

Chicago of the Present. — From a town of 150 inhabitants and covering six square miles of territory, Chicago has grown in two-thirds of a century to be the sixth city in the world, with 1,698,575 inhabitants (census of 1900) and covering 196 square miles of closely occupied territory. The city occupies one-fifth of Cook County. (Careful estimates of 1902 credited Chicago with 2,000,000 inhabitants.)

Manufacture and Commerce Portion. — The location of Chicago, where it must of necessity have great advantages of transportation, has made it the great commercial heart of the nation. From all of the fertile country between the Rockies and the Appalachians, raw products are shipped to Chicago by rail and boat. These products then go through one of two processes: they are either stored in great collecting concerns of Chicago, resold and shipped out in large quantities; or are here manufactured into new products and distributed over the world. Chicago has become the greatest collecting and distributing centre of the United States for lumber, grain, and

live stock, and the greatest manufacturing centre for machinery, cars furniture, and prepared meats.

(As the railroads made their way into Chicago they aimed to connect with the commerce in the harbor and so built their main lines or branches to the river.) Hence the river is the centre of manufacturing, storage, and shipping, and presents a busy scene day and night. Great lake freighters, coal and lumber barges, many larger and smaller schooners, passenger steamers, and innumerable smaller craft continually fill the stream. In 1899 more boats arrived in and cleared the Chicago harbor than any other harbor in the United States. In actual tonnage of vessels Chicago was graded as fourth in the world. Only London, New York, and Hamburg respectively lead Chicago in this respect. It handled three times the boat freight of Boston and almost



FIG. 23.

Grain elevators along the Chicago River.

four times that of Philadelphia. Since 1900 Chicago has been greatly reduced in importance as a lake port. This is due to the increased size of lake boats, which find the Chicago River harbor too narrow where railroads and merchants have filled in and built into the river. The old tunnels under the river are too near the surface to allow the great ships to pass over them. The action of Congress, in 1904, compelling the removal or lowering of the tunnels, was taken with a view to restoring this lost shipping to Chicago. The South Chicago harbor and the Calumet River have increased in importance as the Chicago River harbor has decreased. The lower harbor of the Chicago River is lined with docks for the unloading of fruit, vegetables, flour, fish, and other produce for distributing through the city. Farther up the river from this busy portion are the huge elevators for the storage and transfer of grain on its way to the eastern and foreign markets. Sixty-seven million bushels of grain can be stored in the Chicago elevators at

one time. Great lumber-yards cover many square miles along the north and south branches of the river. Most of this lumber comes to Chicago by boat from the north. It is received as rough timber and



FIG. 24.

Lumber-yards along the Chicago River.

is manufactured into furniture and various forms of building lumber, doors, cases, mouldings, etc., and is shipped out by rail.

Bordering the river nearly its whole distance, with river docks on one side and freight tracks on the other, are shops, foundries, mills, and manufactories of every description. Here various raw products are collected from as many different directions and man-



FIG. 25.

The stock-yards, Chicago.

ufactured into commercial products, ready for distribution into homes, farms, and other factories. The mammoth stock-yards and packing-house district is located near the south branch of the river, where it has every advantage of transportation facilities. Thousands of hogs, cattle, and sheep are shipped daily from the Western plains

and the corn belt of the Mississippi Basin to the Chicago stock-yards. In the great packing-houses the animals are slaughtered and the fresh meat is shipped in refrigerator cars to all parts of the United States. Most of the meat, however, is preserved by packing, smoking, drying, salting, and other processes, and a large amount of this is sent to foreign countries. A great number of manufacturing



FIG. 26.

Unloading ore from lake vessels at North Slip of the Illinois Steel Company, South Chicago.

plants have grown up around the packing-houses. These make use of the by-products—hides, horns, bones, and refuse. All of the stock shipped to the stock-yards is not slaughtered, but much of it is resold. The Chicago stock-yards cover a square mile of land and are the largest and most important in the world. Each year the



FIG. 27.

Rail-mill, steel-mill, blast furnaces, and railroad yard of Illinois Steel Company, South Chicago.

Chicago stock-yards receive about nine million hogs, three million cattle, and three and one-half million sheep.

The branching river, with its long area for dockage extending into the heart of the city in every direction, is the central manufacturing district, smoky, noisy; and to the untrained it seems always

unkempt and in a perfect hubbub of disorder, but to one who knows, it appears as well-organized progress, putting forth every energy to meet the demands of the world. The region along the Calumet River is another busy district. Here are centred the iron and steel industries. The ore is brought in great barges from the mines of northern Michigan and Minnesota, and the vast quantities of coal which are necessary for refining and working it are brought by rail from the coal-fields of Illinois or by boat from Pennsylvania. Around these large foundries have gathered many iron-working industries for the manufacturing of rails, car-wheels, tools, nails, tacks, and all kinds of iron implements, until this has become the third centre of importance in the United States for such manufacture.

Manufacturing is not confined entirely to these river districts, but those industries which are not dependent upon the lake transportation have selected in many parts of the city regions accessible to railroads. As will be seen on the map, many roads enter Chicago by following the lake shore to the south of the city. These lead to many elevators, coal-yards, and manufacturing concerns, chiefly out beyond the main residence portion of the city. At Pullman are the greatest car-manufacturing works in the world. Here the easily accessible wood and iron products are made over into cars of every description, from street cars to those palaces on wheels which serve as private cars for the European royalty.

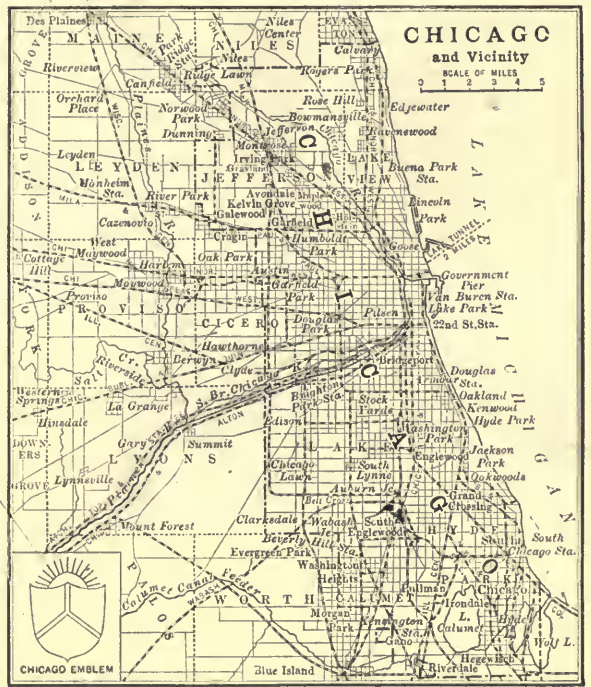


FIG. 28.

BORMAY & CO., N.Y.

The Wholesale, Retail, and Office Portion. — The growth of the business portion early crowded the residences away from the river and occupied the three square miles lying south of the main branch of the river with great buildings which are filled with stores in the lower floors and offices in the upper stories. Many of the higher



FIG. 29.

A sky-scraper — the Masonic Temple, Chicago.

buildings extend from six to twenty-two stories above the street. Such tall buildings are called "sky-serapers," and more of them are found in Chicago than in any other city. From this central business portion, less important business streets radiate for miles into each side of the city, north, south, and west. These streets are the main thoroughfares leading from the residence portions to the "down-town" portion and are occupied by the more important street-car lines.

It is the natural tendency for business houses engaged in the same line of business to collect in the same district

of the city, and the choice of location is usually dependent upon the convenience of transportation and sale facilities. For example, great quantities of fruit, vegetables, and fish come into the city by boat from the shore of Michigan, and formerly quantities of poultry and vegetables came down the river by small boats. The wholesale market for such things has naturally grown up along the river. In the morning South Water Street presents a scene of great confusion. The narrow street is crowded with delivery wagons getting loads of fruit, vegetables, and poultry for the day's sales in the retail markets. The sidewalks are crowded full of crates, baskets, and sacks of such produce. Another vegetable market, of a different sort, is on the West Side, Jefferson Street, in a district most convenient for the wagons loaded with small vegetables, which during the night drive in from the market gardens. Here the wagons stand during the

forenoon until their stock is sold out. The larger retail stores occupy that portion of the city which is most convenient for the public to reach by means of the car lines. Wabash, State, Clark, and Dearborn streets are especially fitted for this. On State Street are located the large department stores, which are, in reality, combinations of many stores in one, and in which every article of use in the home can be procured. One of these stores will employ as many as 2000 clerks. La Salle Street is the special home of banks and insurance companies. Here is located



FIG. 30.

Wholesale fruit and vegetable market, South Water Street, Chicago.

also the Board of Trade, in the pits of which nearly one-third of the farm crops of the United States are exchanged.

The Residence Portions surround the business portion on the three sides of the city — north, west, and south sides. These three residence districts are separated by the manufacturing districts which extend along the river between them. All three are very similar in their organization and each is characterized by the distinctive districts peculiar to a large city.

In every great city there is a large portion of the population which is pressed into comparatively small areas and obliged to live crowded together. This is because of the immense amount of space required for business purposes and because it is necessary for many people to live in the neighborhoods in which they are employed. In Chicago the most densely populated sections are in the manufacturing and shipping districts that line the river and the railroads. Here at the apex and along the sides of the triangle of each side of the city the ground is so much in demand that the houses are separated only by little paths, and there is no room for trees or lawns. As many as from 100 to 300 people live on a single acre in these crowded

districts. Shops line the main streets, and above them the numerous apartments are closely occupied by families. Many of the people in these sections of the city are employed in the great factories, workshops, and other industrial establishments, while some find occupation in the various other lines of work which are constantly being carried on in Chicago. In some localities nearly the entire population is composed of foreigners, many of whom have not yet become accustomed to American ways of living; in these sections English is often spoken but very little. Extending from these congested districts out farther from the centre of the city and farther from the manufacturing and shipping sections, the population becomes gradually less dense and the buildings are less crowded. One effect of the scarcity of land is to prevent thousands of families from living in separate houses. A great number of "flats" are built to accommodate many families in the little space which the city affords. The boulevards and parks form almost a continuous circuit of the city from the old World's Fair ground, now part of Jackson Park, on the south side, through Douglas and Garfield parks on the west side, and including Lincoln Park and the Lake Shore Drive on the north side. These form a most wonderful system of well-cultivated open spaces, and broad, well-paved and parked streets, making over 2000 acres of breathing space. The parks are fitted with outdoor gymnasia, natatoria, boating lagoons, botanical and zoölogical gardens, for places of amusement and instruction. Around this park system and stretching out beyond it are splendid residence districts. Here the residences are for the most part supplied with lawns, and the four to eight miles into the business portion are quickly travelled on the elevated roads and surface car lines.

The Suburbs.—Many of the business men of Chicago prefer to live outside the city limits, in towns where better accommodations for family comfort are possible. This desire has given life to many large and beautiful suburbs along the various lines of railroads running out of Chicago. In the morning and evening hours, thousands of people, who have come in to business from their homes, situated from eight to forty miles from the city, stream out and in from the suburban train stations. Such places are Evanston and the line of beautiful towns situated along the shore of the lake north of the city. Oak Park, Riverside, and La Grange are the larger suburbs on the west side. Beyond the city to the south the land is comparatively low and the suburban towns that have sprung up there are not so numerous or so large as those on the north and west.

The market gardens occupy much of the space between the suburbs. The rich, loamy soil is utilized for growing small vegetables of every variety for city consumption.

Educational institutions have kept pace with the rapid growth of Chicago, and the last few years have seen the development of one of the greatest universities in the world, the University of Chicago. Northwestern University at Evanston and Lake Forest University at Lake Forest are older institutions of the same class. Each of these has extensive professional schools of medicine, law, dentistry, etc., in the city. The University of Illinois also has its medical school in Chicago. Many smaller but important schools and colleges of a private character are scattered through the city. The Art Institute on the lake front affords a splendid gallery and school of art. Private and public museums, the most important of which is the Field Columbian Museum, are assuming importance. Chicago's very complete public-school system includes 234 schoolhouses for grade schools, 15 high and commercial schools, one home school for delinquents, and one normal school.

Waukegan¹ (9426) is the oldest and most important of the places located along the lake, north of Chicago. Waukegan is more favorably located than most of its neighboring towns, having a good harbor where lake craft can land. A belt-line railroad runs from Waukegan around Chicago, crossing all of the important roads centring in Chicago, thus giving shipping advantages almost as great as those of Chicago. These facts have made it one of the important manufacturing cities of the state. Its chief industries are steel and wire manufacture and sugar refining. It is the county seat of Lake County and has nearly doubled in population in the last ten years.

The Illinois River Basin

The Indian villages and early settlements along the Illinois River probably had some influence in determining the location of the present cities, but their importance is largely due to the abundance of natural resources which the basin affords in farm products and coal. The water-power furnished by the rivers, where they have cut through the moraines or run over ledges of bed-rock, has had much to do with the development of manufactures. Transportation along the streams was easy from the

¹ The numbers after the names of the cities indicate the populations according to the census of 1900.



FIG. 31.

Limestone quarry and lime kilns along the Des Plaines River.

in quarrying limestone for building purposes. Much of the limestone is crushed into bits and used for macadamizing roads and as ballast for railroads. All along the old lake outlet, from Summit to Joliet, and especially at Lemont, stone quarries are numerous, and large ovens are continually burning and making lime from the limestone.

Joliet (29,353) is situated on the Des Plaines River, where the stream flows through a narrow channel and by a series of rapids naturally falls about 30 feet in five miles. The water-power determined it as a manufacturing centre, and the close proximity to coal has served to emphasize this feature of Joliet. The largest industry is the manufacture of steel and iron into hardware commodities and implements. The various industries associated with the manufacture of lumber into building materials and cabinets is important. Joliet ranks as the fourth city in the state in value and importance of manufactures. These features have made it an attractive point for railroads. It is a junction point



FIG. 32.

State Penitentiary, Joliet.

for four important roads. An electric line connects Joliet directly with Chicago. Many Chicago business men reside in Joliet. The great Illinois State Penitentiary is located here. Joliet is the county seat of Will County.

Kankakee (13,595) is the county seat of one of the youngest counties in the state. The land of this county, being largely low and marshy, was not attractive to the early settler, but now the value of this rich soil is understood, and by draining the land the very best farm land is made. The broad level lands are divided into large farms producing abundant amounts of hay and oats, and consequently fattening many cattle. Kankakee is important in being the location of the Eastern Hospital for the Insane, the largest of the seven state insane asylums. Kankakee's principal industries are the manufacture of tile and brick and the quarrying of limestone.

Morris (4273), the county seat of Grundy County, is one of the places whose growth was particularly stimulated by the Illinois-Michigan Canal. It became a transportation centre for grain from the rich country surrounding. Its principal industries are still the shipping of farm produce, the manufacture of flour, brick, and tile, and the mining of coal. The value of its products is large compared with its small population.

The bed of the Fox River lies between the Valparaiso and Champaign moraines, running almost parallel with the Des Plaines. It is a good-sized stream, draining the beautiful Fox and Grass lakes, which have become popular summer haunts. From this highland in the north it flows very rapidly with many rapids into the lower land, where it joins the Illinois River. Its rapid fall has made it a good manufacturing stream, giving splendid water-power where dams have been built across its course.

The numerous old roads which ran west and northwest from Chicago forded the Fox River at these rapids, and at these fords settlements grew. Later, railroads were built over these old roads, dams were built at the rapids, and the settlements grew into prosperous manufacturing and shipping centres, although no coal is mined in this part of the state. Such was the origin of Elgin, St. Charles, Geneva, Batavia, and Aurora, all of them originating between 1833 and 1835, when Chicago and this northern part of the state was booming. All of these cities are in Kane County, which is especially noted as a stock-raising and dairy region. Which place is the county seat? All these places, lying within 40 miles of Chicago, are to a large extent resident places for Chicago business men.

Aurora (24,147) is the largest of these cities. It is situated with residence portions on the bluffs along both sides of the river, utiliz-

ing the lower level ground at the edge of the river for the business and manufacturing districts. One of the largest stove-manu-



FIG. 33.

Waterworks, Aurora.

facturing foundries in the world is located here. The wheel-scraper works manufacture grading and road machinery and distribute it all over the new lands of the West. A corset factory employs a large number of men and women. The great C. B. and

Q. Railroad shops employ more men than any other concern in Aurora, repairing and building rolling stock for the road.

Elgin (22,433), 20 miles up the river from Aurora, is especially important as containing the largest watch factory in the world. It employs many highly skilled mechanics and workmen and produces watches equal to those produced anywhere. Clocks and watch cases are also manufactured. Elgin is the most important dairy centre of Illinois, manufacturing butter, condensed milk, and cheese. The Northern Hospital for the Insane is at Elgin.

St. Charles (2675) is also a dairy centre of importance, and with its neighboring places supplies much of the milk



FIG. 34.

Elgin.

consumed daily in Chicago. Geneva (2446) and Batavia (3871) are beautiful places situated on high bluffs along the river. The State

Home for Juvenile Female Offenders is located at Geneva. **Ottawa** (10,588) is the county seat of the large county of La Salle, which ranks third in the state in number of residents and second in number of square miles.

It was along this portion of the river, where it flows through La Salle County, that the largest and most prosperous Indian villages were situated in the early days. (See page 23.) The ease of river transportation here, which had made it a valuable region for the Indians, also made it easily accessible to the whites. The rich soil of the broad valley and the level, well-drained land surrounding, constituted an attraction which caused this region to be the first in northern Illinois which was permanently settled. These same characteristics make it to-day a rich agricultural region with prosperous shipping and manufacturing centres along the river.

The Fox River, emptying into the Illinois, makes a spot naturally advantageous for settlement. All of the old trails and roads which lead from the southeast into the northwestern and northeastern parts of the state crossed the Illinois River near this junction. Ottawa thus started as a junction place. The sandy soil and abundance of coal for fuel led to extensive glass manufacture here as in Utica, La Salle, and Peru. Lamp chimneys, bottles, etc., are manufactured, and flour, feed, brick, and tile are also important manufactured articles. Where the river has cut its deep channel through the rock layers, coal strata are exposed and mining is common. It was in this region that coal was first discovered in America by Father Hennepin in 1698.

La Salle (10,446) is more of a manufacturing centre than Ottawa, owing to better railway facilities. Three important railway lines pass through La Salle, and here is the terminus of the Illinois-Michigan Canal. These facts have made the city chiefly a shipping and transfer point. In the early days this was the head of navigation. Coal and zinc are mined about La Salle. One of the largest zinc works in the world is located here. The manufacture of cement is an important industry; implements, clocks, and glass are also manufactured.

Peru (6863) is closely connected with La Salle, and produces clocks, scales, ploughs, and bricks. Quantities of ice are cut in these cities during the winter and shipped to places less fortunately situated. La Salle and Peru are built on high bluffs overlooking the broad river valley, which at this point has cut into the bed-rock in such a way as to leave many beautiful hills and cliffs. The rugged aspect of this region, naturally well supplied with trees, makes it probably the most noted scenic centre of the state. Starved Rock,

Deer Park, and other places about the entrance of the Big Vermilion River are becoming popular summer resorts on account of their natural beauty and historic interest.

Pontiac (4266) lies about 45 miles from the mouth of the Big Vermilion River. The water power of the rapids caused a mill to be built here, which for years was the milling centre for all of the productive farm land around for many miles. Though this industry



FIG. 35.

Mill at Pontiac on site of original mill.

has become unimportant, it gave Pontiac with its three railroads the prestige which makes the town still the shipping and distributing centre for this part of the state. The chief manufacturing industry is the production of boots and shoes. The Illinois State Reformatory is located here. In this institution about 1500 boys between the ages of ten and twenty-one are confined and are given an industrial education together with a common school education. Pontiac is the county seat of Livingstone County, which is the greatest oat-producing county in the state.

Streator (14,079) is located about halfway between Pontiac and La Salle. It is the heart of a great coal-mining region and is one

of the most important coal-shipping centres of the state. Bottles, window glass, tile, brick, machinery, and hardware are the principal manufactured products. Corn and live stock are raised in abundance in the surrounding county and are shipped from Streator.

Hennepin (523) is the county seat of Putnam County, the smallest county in the state. It is important as being near the starting-point of the Hennepin or Illinois-Mississippi Canal. (See page 16.) The land of Putnam and Bureau counties is probably the most productive of any in the Illinois Basin. No large cities are located here,

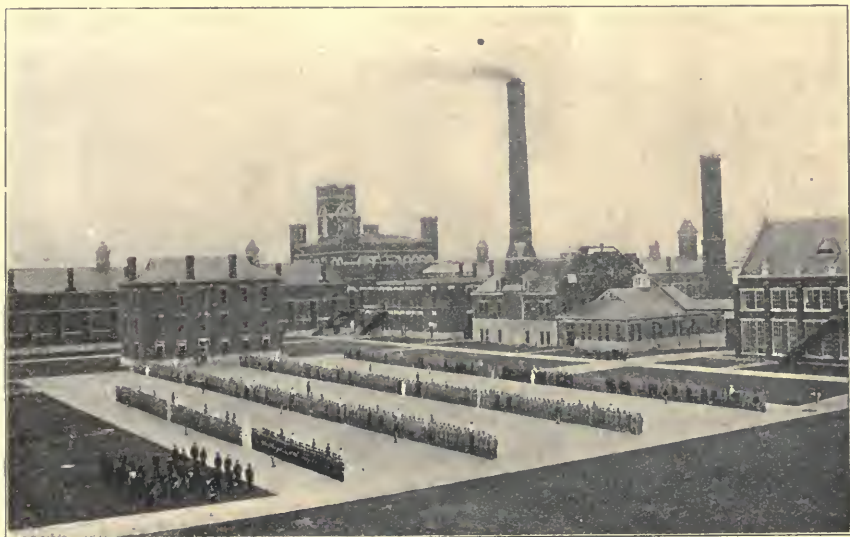


FIG. 36.

Pontiac Reformatory — battalion formation.

but all railroad stations ship large harvests of wheat, corn, rye, and barley. The rich sloping land of Bureau County produces more fruit than any county in the Illinois Basin. The old town of **Princeton** (4023) is the county seat.

Lake Peoria is formed by the widened channel of the Illinois River, and is a broad body of water through which the river flows. About this body of quiet water the Indians built their villages, and at its south end, on the east bank, as early as 1680, La Salle made his headquarters at Fort Crève Cœur. (See page 23.)

Peoria (56,100), the second city of Illinois, began as a French settlement, nestled on the level land under the high bluffs which

stand back from the west side of the river and the lake. It was one of the last French towns to resist the settlement of Americans. Its French population and their supposed sympathy with the Indians during the Indian troubles of 1812 led to the burning of the town by the Americans and the removal of the inhabitants. Surviving many early struggles, its advantageous location in the midst of a rich agricultural region, and its natural advantages as a shipping and transfer centre, caused the town to grow gradually but steadily. Now its splendid residence portion covers the high bluffs back of the original town, and the lower level valley is largely reserved for the commercial and manufacturing districts. Numerous



FIG. 37.

Bradley Polytechnic Institute, Peoria.

railroad lines from all directions run in on this level plain, bringing raw products for manufacture and distribution in this busy city. Its central location has made it a great wholesale centre for groceries and provisions, and a great receiving point for corn. The country all about is underlaid with coal, and mining has made Peoria an important place for the manufacture of machinery and implements. The cheap fuel has led to the manufacture in Peoria of nearly 4 per cent of the total manufacture of the state. Being in the heart of the great corn belt, it has grown to be the most important centre in the United States for the manufacture of glucose, alcohol, and distilled liquors. Rye also is used in the distilleries, and the demand has stimulated the production of this grain in the northwestern part of the state. Canning of vegetables, fruit, and corn is an important

industry of Peoria. Of what county is Peoria the county seat? How far is Peoria from Chicago? From St. Louis?

Galesburg (18,607) is the county seat of Knox County, which lies on the highland of the Champaign moraine, forming the divide between the Illinois and Rock River basins. The Spoon River rises with many heads from among the hills of Knox and Stark counties. The early settlers found these moraines well wooded and attractive places for settlement. Galesburg, with its wide and well-shaded streets, has more the appearance of an Eastern place than most Illinois cities. The location here of Knox College and Lombard University, makes it something of an educational centre, with the characteristics of a college town. It does not rank high as a manufacturing city, but is the centre in Illinois of the C. B. & Q. Railroad, containing their large shops. A superior quality of paving brick is manufactured here.

Monmouth (7460) is almost directly west of Galesburg, and is the county seat of Warren County. This is one of the few wheat-producing counties of northern Illinois, but its wheat harvest does not equal in value the production of corn or of live stock. Monmouth is much like Galesburg in its characteristics, and is the seat of Monmouth College. Pottery, ploughs, tile, and brick are its most important manufactures.

Pekin (8420) is situated a few miles below Peoria on the flood-plain of the east bank of the Illinois River. It is the county seat of Tazewell County and the centre of a great coal-mining region, shipping great quantities of coal over the four roads centring there. It is an extensive manufacturing place, producing farm implements, flour, hominy, and other corn products. Like Peoria, it produces distilled liquors, glucose, and starch.

Havana (3268) is the county seat of Mason County, and is situated in the broad portion of the Illinois River valley where the flood-plain spreads out into a great level floor covered with rich, sandy loam and silt soil. This flood-plain continues for many miles on the east side of the river through the western part of Cass, Morgan, Scott, and Green counties. The conditions of soil here make this strip a splendid wheat-producing region, while the protection offered in the lower valley by the bordering bluffs makes the region also suitable for the production of fruit.

Beardstown (4827) is situated much as Havana is. Both are extensive shipping points for wheat, live stock, fruit, ice, and fish. The Illinois River is one of the greatest fish-producing streams in the United States. Nearly half a million dollars' worth of fish are taken out annually, and many persons make good profit by fishing along the river in this region.

Jacksonville (15,078), the county seat of Morgan County, is located on the highland, back from the Illinois River. Railroads

were afterward built along these roads, making Jacksonville an important junction and shipping point. Although it has some extensive manufacturing and shipping interests, it is chiefly an educational centre. The State Institution for the Education of the Blind and Deaf and the Central Hospital for the Insane are located here. The other educational institutions are Illinois College and Illinois Woman's College.

The Sangamon River, with its many tributaries, winds through the richest corn, live-stock, and coal region of the state. Nearly all of the tributaries of the Sangamon rise in well-wooded ravines in the Champaign moraine. McLean County, the largest county of the state, is the watershed county of the central part of the state. High and well-drained land, well supplied with groves of timber, was the kind the eastern emigrants eagerly sought in the early days. As the old Danville road ran along the top of the Champaign moraine, it crossed a grove in which there was a fresh, cold spring. This made an enticing camping-place for the pioneers, and was early given the name of Blooming Grove.

In 1831 **Bloomington** (23,286) was made the county seat of McLean County. In 1852 this prosperous farming community attracted the Illinois Central Road, which built along the old north and south road. The "Big Four" soon took advantage of the old Danville road, and Bloomington became a shipping and transfer centre. To-day these characteristics are the dominant ones: a prosperous city of retired farmers, a wholesale and railroad centre, and a county seat. It is not an important manufacturing city, but the large Chicago and Alton shops give employment to many men. The clay soil gives rise to the manufacture of paving-brick, tile, etc.

Normal (3795) was originally a railroad junction of North Bloomington, but in 1857 the state legislature provided for the first state normal school west of New York, and established it in North Bloomington as the State Normal University. Around this grew up the town of Normal, one of the educational centres of the state.

The many streams that rise in McLean County and flow toward the Sangamon River unite in the lower land of Logan County, forming Salt River, the largest tributary of the Sangamon. These numerous streams give the low rich land of Logan County good drainage, making a valuable corn, vegetable, and small fruit region. **Lincoln** (8962) is a railroad and distributing centre for the region and the county seat. Its coal, agricultural products, and lumber from the numerous stream valleys furnish Lincoln with many commodities for exchange.

Springfield (34,150). — Elisha Kelly, an Irishman from North Carolina, was attracted by the productive land of the Sangamon Valley, and in 1818 built his cabin on the highest mound he could find, which happened to be on a small timber branch of the Sangamon, called Spring Creek. He drew about him other settlers of strong personality who were natural politicians. These men succeeded in getting their mound called Springfield, and marked as the location of the county seat of Sangamon County, which then comprised many of the central counties of Illinois. While the state capital was at Vandalia, Springfield determined to become the capital. It elected a body of nine shrewd politicians, among whom was Abraham Lincoln. These men, called the "long nine," succeeded in 1837 (see page 27) in having the state capital moved to Springfield.

In those early days the route for travel and shipment to this part of the state from the East was down the Ohio and up the Mississippi to St. Louis. To reach Springfield it was necessary to go by trail from St. Louis. All farmers' supplies came this way, until in the thirties boats ran up the Illinois River to Beardstown. It then took six or eight weeks to get from the coast. The country about Springfield was rich and productive, but it was too long and dangerous a haul to take the products to St. Louis or to the Illinois River points. When the railroad opened from the Atlantic coast to Pittsburg it so raised the selling price of farm products in the West that it stimulated the building of the first railroad in the state, from Springfield to Meredosia. This was the beginning of Springfield as a railroad centre. At present all of the important railroads of central and southern Illinois have connections at Springfield.

Springfield has become important not only as a political and railroad centre, but as a manufacturing centre. Heavy veins of coal underlie the surrounding country and are mined in and around the city. The shale rock that is taken out of the mines is ground, pressed, and baked into a very superior quality of paving and building brick. The manufacturing of machinery and implements is a flourishing industry, and the Illinois watch factory employs a large force of men.

The real importance of Springfield comes from its political position as capital of the state. The capitol building is one of the finest state capitols in the West. In it are all of the offices of the several state departments. The library and museums are especially fine for state institutions. The state Senate and the House of

Representatives meet here every two years. During this legislative season Springfield is a busy place. Besides the 204 legislators, many clerks, copyists, and other interested people fill the city with an excitable, anxious throng. Curiosity makes Springfield a place of interest to tourists at such times. For besides the assembly, there are places of historic interest in the old home of our martyred President, Abraham Lincoln. The Lincoln Monument marks his burial-place, and his former residence is controlled by the state and kept in much the same condition in which he left it.

Alton (14,210) is an older settlement than Springfield. As early as 1816 the first settlement was made on the narrow level plain on the east bank of the Mississippi. As the country opened up to settlement, Alton increased in importance and became the trade centre for central and southern Illinois. When railroads began to build into this region, Alton struggled to make itself the centre for railroads passing west and south, but the broadness of the river here and its narrowness at St. Louis determined St. Louis as the great railroad centre, and Alton grew slowly in comparison.

At present Alton is chiefly a manufacturing city, its main street extending several miles along the narrow river plain, from which the great Mississippi bluffs rise abruptly to a height of a hundred feet or more. This peculiar lay of land has caused the city to grow in an elongated extent along the river. The large glass factories, the shoe factory, implement works, and flour mills are built on the level plain along the river, while the residences are built back on the edge of the bluffs and in the wooded ravines that run in among them. Alton's chief industry is the manufacture of glass commodities, — bottles, etc., — at which 3500 men are employed. In what county is Alton? What is the county seat?

St. Louis (575,238) and **East St. Louis** (29,655). (See page 23.) The early French settlement of St. Louis was well chosen for later growth. When emigrants wanted to cross the Mississippi they found the narrow place at St. Louis the most desirable. From Vincennes, from Mt. Carmel, and from many landing places along the Ohio River old roads ran directly to Piggot's Ferry, at this place. Later, the river boats found the highland washed by the deep river a dry and safe place for landing in contrast to the low, shallow places usually found along the Mississippi River. The boats' cargoes were here unloaded and distributed to all parts of the Illinois Territory. Later, when projectors of rail-

roads looked for a place to build across the river, this was the place most easily crossed. Thus St. Louis became and is at present the great distributing point for southern Illinois. One great disadvantage St. Louis has always felt is its situation on the west side of the Mississippi, all goods crossing the river having to pay a high bridge toll. On the east side of the river, however, the flood-plain was wide and very low, covered with small lakes and marshes, and at every flood the land was completely submerged. It was necessary for the railroads to cross this lowland to get to the bridge. They elevated their tracks above the dangers from floods and made something of a freight centre on the east bank. Manufacturing and storage concerns found it worth while to build here among the railroads rather than to pay the high bridge toll of from five to six dollars a car. This was particularly true of live-stock concerns. Much of the live stock was shipped from or to the good feeding farms in central and southern Illinois. Stock-yards need a great deal of land. Land was high in St. Louis and very cheap in East St. Louis. Coal in abundance was mined on the bluffs a few miles east of East St. Louis, so that fuel was cheap. These are the chief reasons why East St. Louis became a manufacturing and shipping portion of St. Louis. The lowness of the land made East St. Louis an uncomfortable and unhealthful place in which to live, and those who could afford it had their residences on the high land of St. Louis. Gradually, however, small homes were built on the higher land of the valley. The land was drained, dikes were built along the river to keep the floods back, and as a consequence more homes and retail stores were built until East St. Louis became a low, muddy city of about 15,000 inhabitants. A general move was made to elevate the whole city, and one of the most wonderful undertakings in city building was accomplished. Temporary railroads were built in the streets and earth was hauled in from the bluffs several miles back of the city. Streets were built up, buildings were raised. The level of the whole city was raised from eight to twenty feet. The work is hardly finished, but residences have been built and more manufacturing concerns have moved in, so that East St. Louis has doubled in size in the last ten years, and in 1900 was the sixth city in size in the state, and the third in importance of manufactures. The industry of most importance is the exchange and slaughter of live stock. The great stock-yards cover 650 acres and are next in importance to those of Chicago. Here is the largest horse and mule market in the

central West. All of the large meat-packing firms have big plants here. The several large iron-working and foundry concerns make use of the iron ore shipped up the river from Missouri. The lead mines of Missouri supply East St. Louis with lead ore, from which is manufactured white lead paint. Flour, glass, and beer are important manufactured articles. Nineteen railroads centre here, making an important freight exchange and grain storage centre. In what state is St. Louis? In what county is East St. Louis?

The Kaskaskia River Basin.— From the high bluffs east of East St. Louis the surface slopes gradually to the Kaskaskia River and is underlaid by thick veins of coal. The Illinois counties surrounding St. Clair County include the greatest wheat, rye, and barley producing region of the



FIG. 38.

Factory for manufacture of fruit crates, typical of southern Illinois.

state. Fruit is also grown in some abundance. In going through this basin one's attention is attracted by the large, thrifty-looking farms. They seem older than those in the north, and nearly every farm has its old orchard. Many young fruit trees have been set out in this section, and large fruit farms are beginning to produce an abundance of apples, peaches, and small fruits for shipping north. There is a noticeable absence of large cities in this basin, although it was the first generally settled part of the state. (See page 26.) Many small cities, towns, and villages form centres to which the farmers bring their crops, grain, and fruit, and buy their supplies of clothing and tools. The cities were either located as the remains of some old French or English settlement of the early days, or have sprung up along the railroads at junctions or shipping points. All of them have much the same appearance, — one main street near the depot, several stores, a post-office, schoolhouse, one or two churches, and a well spread out resi-

dence district of farms or larger brick houses. A grain elevator, stock corral, a small grist-mill, and a sawmill are indications of the prevailing industry. In nearly every town of the lower basin there is a factory for the manufacture of barrels and wooden boxes and crates for shipping fruit. The timber along the streams furnishes much of the soft wood for this purpose. All along the railroads of the upper basin are seen the tall shafts and rude buildings that indicate the presence of coal mines.

Belleville (17,484) is the largest city of the lower basin. It is located on the high land near the centre of St. Clair County, of which it is the seat. It is a thrifty city with a large German population, chiefly engaged in the mining of coal and manufacture of iron.



FIG. 39.

A typical mining town of Illinois.

Vandalia (2665), many years ago the state capital, is now like Nashville (2184), Carlyle (1875), Greenville (2504), Salem (1642), and Hillsboro (1937), a prosperous little railroad centre for the collection of agricultural products and coal, and chiefly important as a county seat. (Of what counties are these places the seats?) Centralia (6721) is a rapidly growing city, located chiefly on account of the rich beds of coal mined in that locality. It has become noted as a shipping point for fruit, especially apples, berries, and melons. The land about the head waters of the Kaskaskia is the high, well-drained rolling soil of the Champaign and Shelbyville moraines, with wooded ravines and fresh-water springs, which appeared so attractive to the early settlers. This region was quite thickly settled and divided into large counties before any cities grew. When Shelby County was organized and the commissioners looked for a suitable seat, they chose a high mound near the west bank of the river where a spring

attracted their attention. Here Shelbyville (3546) grew into a railroad centre for a rich corn country. The upper Kaskaskia Basin is part of the great broom-corn producing region, and the manufacture of brooms is a consequent industry of Shelbyville. Coal is also mined in large quantities. Pana (5530), 20 miles west of Shelbyville, in Christian County, is a railroad and manufacturing centre. The extensive mining of coal has led to the manufacturing of iron commodities. A great deal of live stock is shipped from this region, mainly to East St. Louis.

The Big Muddy River Basin, together with all the low land of southern Illinois, is familiarly known as "Egypt," a term which seems well applied when one realizes the extent of flood-plain soil. The northern part of the



FIG. 40.

Typical strawberry field of southern Illinois.

basin, like the northern part of the state, is covered with glacial drift; but its lower, southern part remains uninfluenced by the ice sheet and is covered with fine loam soil, which was deposited largely by old glacial lakes and drainage streams from the higher land on the north and south. The southern climate and abundant rainfall make this basin, together with a like region in the Saline River Basin directly east, the great fruit belt of the state. On the southern slopes of hills and rolling prairie all kinds of trees and small fruit flourish. The resources of this region are not as yet fully developed. Only within the last few years have the possibilities of this rich land been understood. Much of the country is covered with good forests of white and red oak, hickory, elm, and gum. The absence of glacial drift has left the bed-rock close to the surface, and in many places thick veins of the best coal in the state crop out from the northern

slope and are easily mined by slope mines and shallow shafts. Until recently the transportation facilities of the region have been very meagre. With the building of railroads and a chance to ship out the products of the region comes the prospect of energetic residents and abundant capital which will make southern Illinois one of the greatest fruit regions of the United States.

Mt. Vernon (5216) is located on a high mound where two old wagon roads have a junction, crossing near the head of the Big Muddy River. It is now a railroad centre and county seat.

Surrounded by good farms on which quantities of fruit, hay, and wheat are raised, and underlaid with good coal veins, it has become



FIG. 41.

Typical young orchard of Big Muddy Basin.



FIG. 42.

Mine buildings. Shaft, washer, and implement house of Peabody Mine, Marion.

a shipping and manufacturing city. The Mt. Vernon Car Manufacturing Company has a large establishment here. Quantities of white oak from the forests of this basin are cut into railroad ties. At Mt. Vernon a large plant treats these ties with chemical sub-

stances to preserve them from decay. Murphysboro (6463), Carbondale (3318), and Marion (2510) are the largest centres of importance in the lower basin, and are typical of all the smaller places of Franklin, Williamson, and Jackson counties. The city population is mainly concerned with the mining of coal. Sawmills and factories for the manufacture of fruit crates, tool handles, and parts of farm implements are scattered throughout the region. Each city, town, and village has one or more elevators for the shipment of wheat, which produces well here. Corn is little grown. At Carbondale is the Southern Illinois Normal University, the largest educational institution in southern Illinois. What counties are included in the Big Muddy Basin?

The Southern Non-glaciated Region. — Going south from the Big Muddy Basin, the land rises abruptly, and the whole appearance of the country



FIG. 43.

Cypress trees in swamp of southern Illinois.

changes. The great rocky hills of the Ozarks rise to 700 and 800 feet, way across the state in Union, Johnson, Pope, and Hardin counties, except where the Mississippi and Ohio rivers have worn their valleys and built their flood-plains on the west and east. These hills are not productive of agricultural crops or coal. Where their limestone cliffs have given way to narrow valleys or broad slopes, large oak, elm, and hickory trees make forests capable of producing good lumber. From the hills the land slopes to the Ohio and Mississippi rivers in broad, shelf-like terraces. The lower terraces are swampy and filled with rough forests of cypress and soft-wood trees. This land needs drainage and clearing before its rich soil and warm climate can be properly utilized. Where the land is higher and well drained it is a wonderful fruit and wheat producing region.

Cairo (22,566), the most southern point of Illinois, is located on a tongue of land which is below high-water mark, and has been built on a bar of sediment at the entrance of the Ohio into the Mississippi River. As early as 1818, far-seeing men gained possession of this apparently worthless land. At the junction of two so great navigable streams a city must in time grow. Great levees

have been built about the city 55 feet above low-water mark, and a pumping system rapidly empties the city of any seepage water that enters. The business portion and much of the residence portion have been filled up to a higher level. A great railroad bridge costing four millions of dollars has been built across to the Kentucky shore. Since these accomplishments Cairo has grown rapidly in population, but its extensive commercial interests have grown out of all proportion to its population. It has become a great point of exchange between the grain-producing section of the North and the grain-consuming region South. Down



FIG. 44.

Lumber yard near implement and crate factories in southern Illinois non-glaciated region.



FIG. 45.

Piece yard, showing pieces ready for manufacture into fruit crates.

the Ohio and its extensive tributaries and down the northern Mississippi and its tributaries many ships bring cargoes, to be distributed by rail or reshipped in larger boats down the Mississippi. Most Gulf of Mexico boats can ascend the Mississippi to Cairo with cargoes for distribution to the north. The

lumber industry is of the greatest importance. The hard lumber from the Alleghany plateaus in West Virginia, Kentucky, Tennessee, and Alabama, and from the Ozark Mountains of Missouri and Arkansas, comes to Cairo by boat and is here stored in great lumber-yards, awaiting distribution, or is made into building lumber, implements, and crates.

Mound City (2705), Metropolis (4069), Golconda (1140), Elizabethtown (668), and Shawneetown (1698) are small county seats that have grown upon the higher mounds along the Ohio. They are all alike interested in the river traffic. The chief industry of each is woodworking in small mills and factories. The hardwood lumber which comes down the Ohio is here made into parts for farm implements and sent to the manufacturing centres in the northern part of the state. Of what county is each the county seat?

The Wabash River Basin in Illinois.—The land of Champaign and Vermilion counties, drained by the Vermilion River, is much like that of the Champaign moraine as described about Bloomington. The broad, rolling fields produce large crops of corn and hay, and consequently live stock is fattened and shipped either to Chicago or St. Louis. Coal is mined in some quantities in the eastern part, especially about **Danville** (16,354), the county seat of Vermilion County. As in its infancy (see page 50), Danville has continued as a junction place. The old roads are now occupied by railroads running east and west and north and south. The shipments of coal, corn, and live stock are large. Brick, tile, flour, and carriages are manufactured. **Champaign** (9098) and **Urbana** (5728) are located so near together that they almost form one city. The location of the State University at Urbana, in 1867, has made these places chiefly educational centres. The railroads have made Champaign the railroad centre, though the Big Four Railroad shops at Urbana give rise to the largest single industry. Which is the county seat?

Paris (6105) is located on the Shelbyville moraine, where the old Mt. Carmel road branched off to the west. Its chief manufactured articles are brooms made from the broom-corn grown throughout this part of the state. Corn, live stock, and fine horses are shipped. Paris is the seat of Edgar County. **Mattoon** (9622) is a railroad centre on the Shelbyville moraine. The large railroad shops account for much of its population. Brooms, farm implements, and agricultural products are its chief products. **Charleston** (5488) is the county seat of Coles County. The region along the Wabash and its tributaries, the Embarras and Little Wabash rivers, is much like that of its neighbors, the Kaskaskia and Big Muddy rivers on

the west. The agriculture of all this region along the Embarras River is mainly taken up with the production of broom-corn. These counties produce two-thirds of the broom-corn grown in the United States. Corn and live stock are raised in less abundance than they are farther north, wheat and fruit becoming important in their stead. The cities are smaller, and of importance mainly as railroad centres and county seats. Coal is mined extensively in the lower basin of the Little Wabash and Saline rivers and makes manufacture of some importance. **Olney** (4260), **Mt. Carmel** (4311), and **Carmi** (2939) are the largest cities of this section.



FIG. 46.

Building a railroad through a typical southern Illinois region. Limestone with thin soil above.

The Rock River Basin is the highest basin in the state. The river, with its two important branches, the Pecatonica and the Kishwaukee rivers, falls rapidly but gradually from the highlands to its mouth, thus furnishing excellent water-power for manufacturing purposes. The rolling land above the valley is well occupied with farms, where corn and hay, and consequently live stock, are produced in abundance. The dairying industry before noticed along the Fox River is prominent also in the Rock River Basin. More rye is produced in this basin than in any other in the state. No coal is mined in the basin. The northwestern corner of the state can hardly be included in this basin, but drains by short streams directly into

the Mississippi. This is a non-glaciated portion, and its characteristics are marked. (See page 16.) The early discovery of lead and zinc ore along Fever River caused an early rush for this region, and **Galena** (5005) grew as a mining centre. These metals are still mined in small quantities, but the discovery of other richer deposits farther west and the tendency to exhaust the supply here have decreased the importance of the industry in Illinois. Galena was for a long time the home of U. S. Grant. His house is now preserved in memory of him. Of what county is Galena the seat? The early emigration to Galena had an important effect upon the development of the Rock River Basin. Where the old roads led across the river, settlements started and have grown into cities, chiefly important as manufacturing centres. This region was settled almost entirely by people from the North, New England, and New York State. The wooded valleys and well-drained land had their influence on making the handsome cities now found in this basin.

Freeport (13,258) grew from a small settlement started in a high and attractive location. It is now an important railroad centre and manufacturing city. Windmills, vehicles, and implements are the chief manufactured articles. Of what county is Freeport the seat?

Rockford (31,051) began as a settlement where the same Galena road which passed through Freeport forded the Rock River. The broad, level flood-plains on each side of the river, bordered with high bluffs, formed an attractive birthplace for what was to become one of the most beautiful cities in Illinois. The first settlers were New Englanders, and their energy, attracting more people of the same kind, built the present manufacturing and shipping city of Rockford. Working lumber into furniture, doors, sashes, and windows is the chief industry. Dairy products and harness supplies are important shipments. Rockford is a large wholesale centre for northern Illinois and southern Wisconsin. It is also an educational centre. Rockford College is situated here. Of what county is Rockford the seat?

Belvidere (6937), like Freeport and Rockford, owes its location to the old road crossing over the Kishwaukee River. The country surrounding Belvidere is especially suited for dairying, and Belvidere is noted for the manufacture of condensed milk and other dairy products. The largest sewing-machine factory in the state employs 1500 skilled workmen, and is located at Belvidere. This town is the seat of Boone County. De Kalb County is also in the stock and dairy region. The land is high and is drained by a number of streams, north into the Rock River system and south into the Illinois River. The natural timber along these streams attracted the early settlers, who believed that crops could not be grown on

the prairie soil. In the contest for the county seat **Sycamore** (3653) was selected and soon became the commercial centre for the region. The canning of vegetables and manufacture of hardware are the important industries. **De Kalb** (5904) has outgrown the county seat, chiefly owing to superior railroad facilities, and has become an important manufacturing and shipping centre. Barb and woven wire fencing is the most important manufactured product. Large dairy and fancy stock farms surround this city. De Kalb is the seat of the Northern Illinois State Normal School.

Dixon (7915) is one of the oldest cities in this basin. Dixon's Ferry, across the Rock River at this point, was a popular crossing place for the more southern of the old roads leading to Galena. The water-power has made Dixon a manufacturing city. It has the largest condensed-milk factory in the world. Wagons, farm machinery, and pianos are important products. Of what county is Dixon the seat?

Sterling (6309) and **Rock Falls** (2176), on either side of the river, are a few miles below Dixon, and both are manufacturing centres, located where rapids in the river give natural water-power. Almost the first building was a mill, and since its success mills and factories have located about the dam. The manufacturing of harvesting machinery and farm tools is the most important industry. Wire, furniture, and flour are shipping products. What is the seat of Whiteside County?

Below Sterling, the Rock River Basin assumes very different characteristics from those of the upper basin. The river flows through low, level land, once occupied by the broad Mississippi. (See page 17.) At the mouth of the Rock River the Mississippi divides, and flows in two unequal streams on both sides of a large limestone island. The low flood-plains on the east bank and the high bluffs of the west bank were favorite places for Indian villages, and the island made a safe retreat for them in time of war. Though this made a favorable place for the white men to trade, like Chicago it was too much of an Indian thoroughfare for permanent white settlements, until in 1816 the government built a fort on the island, which afforded the settlers protection.

The east bank was the more favored for residence, and a small settlement grew rapidly on the broad flood-plains, under the protection of the prominent bluffs behind. When Rock Island County was apportioned off, this settlement became the seat under the name of Rock Island. At this point the Mississippi River flows over rapids with a fall of 21 feet in 14 miles. These rapids are especially prominent on the east side of the island, and in a very early day this splendid water-power was utilized for small mills to make lumber of the logs that were floated down the Mississippi from the more northern forests. Then Rock Island, and the city of Davenport in Iowa on the west bank, became great lumber centres for a time, but the decreasing supply of lumber in the northern forests

has caused this industry to greatly diminish. Numerous manufacturing concerns built along the river to use the water-power. The growth along the river was limited by the high hills above the flood-plains, and another manufacturing city, Moline, grew just



FIG. 47.

Armory Row — front of shops, Rock Island Arsenal.

above Rock Island. Thus the tri-cities of **Rock Island** (19,493), **Moline** (17,248), and **Davenport** grew on the shores about the island. The island made the river easy to bridge at this point, and the government aided the Chicago, Rock Island and Pacific Railway to build here the first railroad bridge across the Mississippi connecting the West with the East. This gave the tri-cities the impetus to boom into what they now are, — centres of manufacture and shipping. The island is the property of the federal government, and on it is the most complete government arsenal for the manufacture of army supplies. Between 25,000 and 30,000 men are thus employed who make their homes in the tri-cities. Rock Island is the chief railroad centre. Its manufactures are mainly lumber, stoves, ploughs, and farm implements. Moline has a population largely composed of thrifty Scandinavians. This with its water-power has made it a manufacturing city. The largest plough works in the world are located here. Many other farm implements, wagons, brick, tile, lime, etc., are manufactured here. The tri-cities have always felt the lack of any connection by water transportation

with the Great Lakes. For many years it has been planned that a canal should be built through the old Mississippi River bed (see pages 16, 27) from below the rapids on Rock River to connect with the Illinois near Hennepin. Work on the canal is progressing from both ends and should be completed in a few years, connecting with the tri-cities by a cheap canal route Chicago and the Great Lakes by means of the Illinois River and the Illinois-Michigan Canal.

The Mississippi River below Rock Island, to the entrance of the Illinois River, flows between high bluffs on each side; but on the Illinois side for most of the distance a low flood-plain lies between the river and the bluffs, so low that it is poorly drained and subject to overflow and floods from the Mississippi. At a few places the bluffs come near the river, and here small towns have grown.

The only place of great importance is **Quincy** (36,252), located where the long line of bluffs makes a bend toward the river, leaving high land and a splendid location for a city. The Indians realized the advantages and beauty of this location, and one of the largest



FIG. 48.

Soldiers' and Sailors' Home at Quincy.

Sauk villages was located here. A white trading-post was located here, and its growth progressed much as at Rock Island.

Quincy formed a good landing place for early river transportation, and from it old trails ran in all directions to the centre of the

state. On account of the high bluffs on each side the river was easily bridged, and Quincy became the distributing point, not only for Illinois, but for northern Missouri. It is also an important railroad and manufacturing centre and ranks third in size in the state. Its chief industries are those concerned with the manufacture of lumber into commodities: furniture, cabinets, building material, implements, and wagons. Stoves, iron, and leather work are also important products.

CHAPTER V

SUMMARY

Population. — Illinois ranks as the third state in the number of its inhabitants, only New York and Pennsylvania having a greater population. "The population of the state in 1900 was 4,821,550, as compared with the population in 1890 of 3,826,358, showing an increase during the last ten years of 995,199, or 26 per cent. The total land surface of Illinois is 56,650 square miles, of which 650 square miles is water, the average number of persons to the square mile being 86. There are 930 incorporated cities, towns, and villages in Illinois: 614 have less than 1000 inhabitants; 878 have less than 5000, 27 have more than 5000 but less than 10,000; 14 have more than 10,000 but less than 20,000; four have more than 20,000 but less than 25,000."¹ All of the larger cities of Illinois show an increase in population since 1890. The largest percentage of gain is 95.4 for East St. Louis and the smallest 15.1 for Quincy.

The urban population is rapidly increasing in the northern part of the state, and the country population in the southern portion of the state is growing as the value of the land for agricultural purposes is being realized. A glance at Fig. 22 will show that the population is much denser in the western and northern parts of the state and also much denser along natural transportation routes than it is in counties situated at a distance from lakes or navigable rivers.

Agricultural and Mining Products. — As an agricultural state Illinois ranks among the first, the value of its farm lands being the highest of any state; it falls below Iowa alone in total value of farm products. The great diversity of its products keeps it from ranking far above other states in the production of any one crop. Corn is the greatest crop, and as a corn-producing state it ranks first, surpassing Iowa slightly in amount and value of its corn crop. The

¹ From Census Bulletin No. 21, Dec. 15, 1900.

principal corn-producing part of the state is the central and northern portion, the Illinois and upper Kaskaskia and Wabash basins. The small amount of wheat produced in the state is not nearly enough for its own consumption. Rye is grown principally in the north-western part of the state. Most of the crops raised in Illinois are turned into stock or dairy products; 450,000,000 gallons of milk are annually produced in the state. Illinois stands as the fourth state in the production of hogs and fourth in the number and value of its cattle. It takes first place as a producer of horses and mules. The dairy products, milk, butter and cheese, so extensively produced in the northern part of the state, cause Illinois to rank fourth in this line. As a fruit state its influence is just beginning to be felt through its railroads newly built into the southern portion, thus giving a means of rapid transportation to the market.

Apples are grown over the greater part of southern Illinois, the counties of Clay, Marion, Richland, Wayne, Jefferson, Hamilton, Crawford, Effingham, Fayette, respectively, being the heaviest producers.

Peaches are grown to a greater or less extent over all of southern Illinois. Commercial orchards, however, are confined mostly to territory on the Illinois Central and Chicago and Eastern Illinois lines, which give quick transportation to northern markets. Marion and Union counties lead in this line. Jackson, Johnson, Pulaski, and Alexander counties are important producers of small fruits.

Gem melons are produced in great quantities. Marion County produces annually from 500 to 700 car-loads. Madison County stands second; 800 cars of fruit and vegetables are loaded at some stations along these lines, and as high as 400 cars of apples alone were loaded at some points in Clay County in 1892. The twenty-six million tons of coal mined in the state have given Illinois the place next to Pennsylvania as a great coal-producing state.

Transportation and Manufactured Products.—Illinois ranks third as a manufacturing state. "The high rank of Illinois as a manufacturing state is due primarily to its transportation facilities. The communication with the East afforded by Lake Michigan and its connecting waters early made Chicago the great distributing centre for Eastern products to all points in the West and Southwest, while the Mississippi River, bordering the west portion of the state, afforded communication with the entire Mississippi Valley. Supe-

rior railroad facilities were the direct result of the trade routes established by these opportunities for water transportation; for, when railroad building began, Chicago was the natural focussing point, and to reach that city all sections of the state were traversed and opened up to settlement. In 1900 there were 10,997 miles of railroad in Illinois, a larger mileage than was shown for any other state in the United States. With such facilities for obtaining raw material and for marketing manufactured products, and with abundant bituminous coal in many sections of the state, the development of manufacturing has naturally been very rapid." In no other state are small cities and towns so noted as manufacturing centres. Slaughtering and meat-packing is the most important industry in the state. In the 64 establishments reported in 1900, employment was given to 27,861 wage earners, and the produce was valued at \$287,922,277. Chicago is the great live-stock market for the West and Northwest. The packing of meats was begun there in 1836, before the city was incorporated. The manufacture of foundry and machine-shop products ranks second among the industries of the state, with 758 establishments and products valued at \$63,878,352. There are 26 establishments engaged in the manufacture of iron and steel, the industry third in rank. This industry owes its great development in Illinois to the iron mines of the Lake Superior region, the cheapness and ease with which the ore is handled on the docks of Chicago, and to the low price at which the large supplies of bituminous coal are placed on the market. The first important iron plant in the state was the rolling-mill built on the north branch of the Chicago

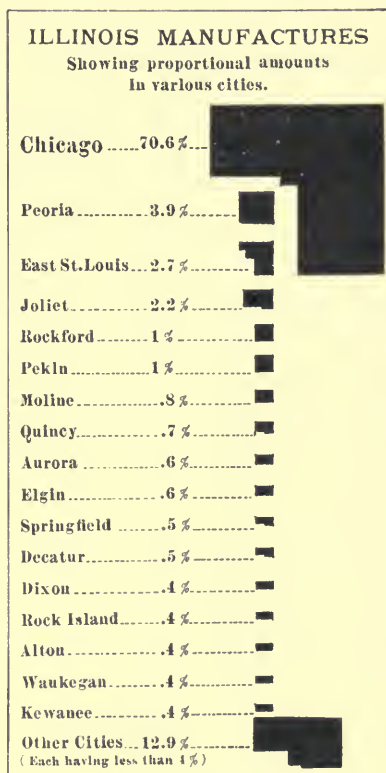


FIG. 49.

River in 1857. The first steel rail made in the United States was rolled in this plant. There were 114 establishments engaged in the manufacture of liquors in 1900, but the value of products has decreased over 10 per cent during the last decade. The abundance of corn caused distilleries to be started in many parts of the state at an early date, but Peoria seems to have been the most favored location for this industry. This city has become the largest producer of whiskey and high wines in the United States. The manufacture of agricultural implements is next in importance. The increase in the value of these products during the last decade was \$17,424,136, or 708 per cent. The agricultural expansion of the state was so rapid that the blacksmiths' shops early developed into agricultural implement factories. The two important raw materials, wood and iron, were obtained at low prices as a result of the cheap transportation afforded by the Great Lakes. This condition gave the rapidly growing state a greater advantage, and many Eastern manufacturers of these products located their plants in the new field. Men in other pursuits changed their occupations and embarked in manufacturing enterprises of this character. Competition aroused the inventive spirit, and one improvement after another followed. Ploughs, wagons, and all kinds of machines demanded or needed by the farmer are now made in Illinois. Nearly every town and city in the state has a factory for the manufacture of agricultural implements, and their value is now more than three times that of the similar output of any other state.

Other important manufactories in the order of their importance in the state are 2000 establishments engaged in printing and publishing, and 900 concerns in manufacturing men's clothing. The 871 grist and flour mills show a decrease in the value of their products for the last decade. The 17 large establishments engaged in the manufacture of steam railroad cars produced rolling stock to the value of \$17,117,223 during the ten years from 1890 to 1900, giving Illinois first rank in this line of manufacture. There are 98 railroad establishments engaged in car construction and general shop work. The six glucose factories consumed corn to the value of 20 per cent of the entire corn crop of the state. There are now 35 distinct products made from corn by the glucose plants. The furniture industry is represented by 148 establishments. An increase of 61 per cent in the value of cheese, butter, and condensed milk measures in part the growing importance of the dairy industry.

These are the 13 most important manufacturing industries of the state.¹

Government. — There are certain things which must be done in order that the 4,821,550 people in the state may advance and live peaceably and conveniently together ; laws must be made to keep them from interfering with one another, roads must be built, schools held ; and homes protected from fire and thievery. If every man took the time to do all these things for his family, he would have little time for other business. It has been found best that each man should attend to his special business and contribute part of his earnings to pay men who are capable of doing these things for the good of the people of the state. It is intended that each man should have an equal chance at election time in voting for the man whom he wishes to have do these things for him. The state is divided into various districts, each with its definite boundaries and each with a special part to play in the organization of the whole. Each school district, township, county, and legislative district has its own officers elected by the people residing within its boundaries, and over all is one executive, the governor, elected by the people of the whole state.

All the states which are united to form the United States are very similar in their organization within themselves. Each state has control of matters within its own boundaries so long as other states are not affected. For the purpose of controlling its own affairs Illinois is organized under a form of government very much like that of the United States. There are two legislative bodies which meet at Springfield once in two years to make the laws of the state, levy taxes, and make appropriations for public improvements. The smaller of these bodies is called the Senate or "Upper House." The larger is known as the House of Representatives or "Lower House." The Senate is composed of 51 senators, each elected for four years from a senatorial district. Each district elects three representatives to the Lower House. What legislative district do you live in? With the Governor are a number of other state officers such as the Secretary of State, State Auditor, Treasurer, Attorney General, and Superintendent of Public Instruction. These officers, with many boards, commissioners, and inspectors, appointed by the Governor, have charge of the different departments of state, aiding the Governor in executing the laws made by the legislature

¹ Most of this material on manufactures has been taken from the Twelfth Census of the United States, Vol. VIII.

and seeing that the state Constitution and the laws are enforced. The judicial department is composed of the Supreme, Circuit, and Appellate courts. These courts explain and apply the laws of the state and thus assist the executive officers in seeing that laws are properly fulfilled by the people. Each county, each township, and each city has its own officers who attend to the public duties in these smaller divisions, much as the state officers do for the state as a whole.

APPENDIX

TABLE I. GROWTH OF STATE IN POPULATION

CENSUS YEARS	POPULATION	INCREASE	
		Number	Per Cent
1900	4,821,550	995,199	26.0
1890	3,826,351	748,480	24.3
1880	3,077,871	537,980	21.1
1870	2,539,891	827,940	48.3
1860	1,722,951	860,481	101.0
1850	851,470	375,287	78.8
1840	476,183	318,738	202.4
1830	157,445	102,283	185.4
1820	55,162	42,880	349.1
1810	12,282

TABLE II. TABLE OF SOILS OF ILLINOIS¹

VARIETY	ORIGIN OR MODE OF DEPOSITION	AREAL DISTRIBUTION
Residuary	Decay of the underlying rocks	Driftless portion of the state wherever the loess as well as the glacial drift is absent.
Glacial clay	Glacial	Mainly in the northeastern quarter of the state where loess and silts are generally absent. The Shelbyville moraine forms the southern boundary, and chiefly the western boundary, but in northern Illinois glacial clays form the soil on the older drift area between the Shelbyville moraine and the loess of the Mississippi Valley.

¹Taken from the Report of Illinois Board of World's Fair Commissioners, 1893.

TABLE II. TABLE OF SOILS OF ILLINOIS — *Continued*

VARIETY	ORIGIN OR MODE OF DEPOSITION	AREAL DISTRIBUTION
Gravelly	Glacial overwash streams, lakes	With the glacial clay in the northeastern part of the state and along streams leading away from the Shelbyville and later moraines. This variety of soil includes gravel knolls and ridges, overwash gravel plains, terraces, and raised beaches.
Sandy	Glacial drainage streams, lakes, winds	Mainly in basins along the Kankakee, Green, and lower Illinois rivers; old lake-bottom and raised beaches near Chicago; also on bottom-lands, and fringing in many places the low bluffs of streams, and locally developed on areas of glacial formations.
Silts pervious to water (chiefly the typical loess)	Mainly by slowly flowing waters; perhaps in part wind	Along the Mississippi, lower Illinois, lower Wabash, and lower Ohio rivers; also between the Illinois and the Mississippi from the Green River Basin south to the latitude of Peoria and in the basin of the Big Bureau Creek, in Bureau County.
Silts slowly pervious to water	Mainly by slowly flowing waters; perhaps in part wind	Mainly in west central Illinois, west of a line connecting Alton, Litchfield, Pana, Decatur, and Peoria; also on the eastern border of the Mississippi Valley loess belt, in the northern part of the state.
Silts nearly impervious to water (two kinds, mainly white clays and gumbo)	Nearly still waters; perhaps wind in part	White clays cover much of southern Illinois south of the Shelbyville moraine, as far west as the Mississippi loess, east to the Wabash loess, and south to the Ohio River loess. Gumbo is found on some bottom-lands along the main river.
Peaty and marly	Vegetal accumulations and shell deposits	Locally over the greater part of the state where drainage is imperfect. Peat is rare south of the latitude of Springfield, but it abounds in the northeastern quarter of the state, in bogs. Marl deposits are less extensive than peat, but are fully as widespread.

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